Substance use and related problems: a study on the abuse of recreational and not recreational drugs in Northern Italy

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Summary. 2015 subjects were interviewed at musical events and raves in Northern Italy: average age 25.1, 42% female, 67% work, 42% study, 61% have higher certificate of education. 3.8% used drugs for the first time in the last year, and 60% have been using drugs for over 5 years, age of first use 16.3. In the last year, 26% have tried a mix of drugs, 52% alcohol and drugs, 48% have driven after drinking; drug consumption was: marijuana 58%, hashish 55%, cocaine 24%, popper 12%, hallucinogenic mushrooms 13%, ecstasy 13%, amphetamines 13%, *Salvia divinorum* 11%, LSD 9%, opium 9%, ketamine 7%, heroin 5%. In the last year, 27% subjects had depression, 25.7% anxiety, 23.7% sleep disorders, 15% financial problems, 13% road accidents, 9% addiction, 6% judicial problems. All problems were correlated to CAGE (Cut, Annoyed, Guilty, Eye-opener) test, drug use and mix drug use; psychological problems were higher for females: anxiety for cocaine, memory and psychosomatic for opium, sleeping disorders for crack, anxiety for popper, hallucinations for LSD and hallucinogenic mushrooms.

Key words: musical events, raves, drug use, alcohol, mental health problems, gender differences.

Riassunto *(Uso di sostanze e problemi connessi: uno studio sull'uso/abuso di sostanze psico-attive nel Nord Italia).* Sono stati intervistati 2015 soggetti nel corso di eventi musicali e raves nel Nord Italia: età media 25,1 anni, 42% femmine, il 67% lavora, il 42% studia, il 61% ha il diploma di scuola media superiore. Il 3,8% ha iniziato l'uso di stupefacenti nel corso dell'ultimo anno, il 60% usa sostanze da più di 5 anni, l'età media di primo utilizzo è di 16,3 anni. Nel corso dell'ultimo anno il 26% ha utilizzato più sostanze stupefacenti durante la stessa serata, il 52% alcol unitamente a stupefacenti, il 48% ha guidato dopo aver bevuto alcolici, il 58% ha utilizzato marijuana, il 55% hashish, il 25% cocaina, il 12% popper, il 13% funghi allucinogeni, il 13% ecstasy, il 13% anfetamine, l'11% *Salvia divinorum*, il 9% LSD, il 9% oppio, il 7% ketamina, il 5% eroina. Nel corso dell'ultimo anno il 27% ha avuto problemi di depressione, il 25,7% ansia, il 23,7% disturbi del sonno, il 15% rilevanti problemi economici, il 13% incidenti stradali, il 9% dipendenza da stupefacenti, il 6% problemi con la giustizia. Tutti i vari tipi di problemi risultano correlati con la positività al test CAGE (*Cut, Annoyed, Guilty, Eye-opener*), all'uso di stupefacenti, al mix di stupefacenti; i problemi di tipo psichico risultano più elevati per le femmine; l'ansia risulta correlata all'uso di cocaina, problemi di memoria e disturbi fisici e psicosomatici all'uso di oppio, disturbi del sonno per crack, ansia per popper, allucinazioni per funghi allucinogeni e LSD.

Parole chiave: eventi musicali, rave, stupefacenti, alcol, salute mentale, differenze di genere.

INTRODUCTION

The consumption of mind-altering substances and alcohol is widespread amongst young people and is often associated with social contexts and activities. Various factors influence the decision to use these substances, including curiosity, peer pressure, the ready availability on the market and favourable occasions. Substance abuse is a leading cause of physical and mental health problems, as well as social-economic problems for youngsters. The European Addiction Monitoring Centre has estimated that in the European Union approximately 50 million people have tried an illegal substance in their lifetime and at least 7% of the population between the ages of 15 and 64 has done so recently. According to a 2004 report on drug addiction prepared by the Italian Parliament, at least 1 in 5 people between 15 and 54 years of age has tried an illegal substance at least once in his lives, and this percentage is even higher (30%) for those aged between 15 and 34. A distinction must be made between "recreational" drug users and drug addicts, who are estimated to make up less than 1% of the total Italian population and the majority of whom are assisted by the public health and welfare services.

Research conducted on study populations of young people in various recreational contexts and their use of mind-altering substances has highlighted the key

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difference between the target group of "recreational" users and subjects who are assisted by public and private drug addiction counselling services: "recreational" drug users do not generally belong to the more disadvantaged social classes or to those at risk of social isolation. Instead, they tend to be youngsters, students and office workers who are relatively well-off and well-educated. The main risks run by these young people are linked to possible future drug addiction, to various traumatic events caused by mental impairment (accidents), inexperience (overdoses) or to the long-run effects of prolonged drug use (*e.g.* psychiatric, psychological, physical and financial problems).

Furthermore, widespread consumption of alcohol suggests a scenario made up of a vast range of consumption styles and new consumption patterns reflecting new social and substance use trends. These young people do not contact public or private addiction counselling services either because they are unaware of their existence, or because they do not consider themselves addicts, or because they feel these services are not designed for or would be unable to help them.

The aim of this research project was to estimate the prevalence of various problems encountered by consumers of mind-altering drugs. Particular attention was dedicated to identifying categories of subjects who may be potential abusers of alcohol, drugs or both, and the various types of problems that they reported.

Attendees of musical and entertainment events (the "Street Rave" parade in Bologna, the Heineken beer festival in Imola, the "Flipp Out" festival in Bologna and "Arezzo Wave") were chosen as the sample population for the study as the majority of those attending these events adopt similar lifestyles and use (or have used) drugs to a greater extent than their peers and tend to be early adopters of new trends in drug consumption [1-16]. The "Street Rave" parade took place in Bologna on July 3 2004; since 1996, it has represented the largest musical anti-prohibition event for young people in Italy, with the 2004 edition drawing a crowd of over one hundred and fifty thousand people. Along the same lines, since 1987 "Arezzo Wave" (Arezzo, 7/10 July 2004) has been one of the main musical events for youngsters in Italy, with the 2004 edition of this week-long event attracting a total of more than two hundred thousand people.

The interviews have been administered before the beginning of the musical events in proximity to meeting places. A coupon for a gadget was given to every one who accepted being interviewed.

MATERIALS AND METHODS

The questionnaire used for interviews was compiled taking into consideration 5 indicators corresponding to preset closed answer variables: social-demographic data, drug use, alcohol use, risk behaviour and problems encountered over the last year. The social and demographic data considered were: sex, age, location of home, nationality (Italian or foreign), living arrangements (living with family, with flatmates, or alone), whether the respondent was employed (yes/no) or a student (yes/no) and the most recent scholastic/academic qualification obtained (middle school or secondary school diploma, university degree). A copy of the questionnaire both in English and in Italian can be requested to the Author (E-mail: raimondo.pavarin@ausl.bologna.it).

Drug consumption was investigated with regard to use over a specific period of time (over entire lifetime, in the last year and in the last month), age at the time of first consumption and, for those who had consumed drugs in the last month, the main type of consumption (intravenous injection, smoking, sniffing, ingestion). The most common substances reported to have been used were: hashish, marijuana, LSD, ketamine, hallucinogenic mushrooms, *Salvia divinorum*, amphetamines, benzodiazepine, opium, heroin, cocaine, crack, ecstasy, "poppers" and psychiatric medication. Respondents were given the chance to specify other substances not listed.

As far as alcohol consumption was concerned, respondents were asked when they usually consume alcohol (during the week/at weekends) and the frequency of use over the past year (every day, several times a week, once a week, once a month). A CAGE (Cut, Annoyed, Guilty, Eye-opener) test was used to identify problematic drinking patterns.

With regard to risk behaviour (during lifetime, in the last year, in the last month), three items were included regarding the simultaneous consumption of a number of drugs (a polydrug mix) or of alcohol and drugs on the same evening and subjects were asked whether they had ever driven after having consumed alcohol.

The problems encountered over the last year were reported to be: psychiatric problems, treatment with psychiatric medication, legal problems, drug addiction, drug rehabilitation, overdoses, road accidents, severe financial problems and mental health problems such as depression and mood swings, anxiety and panic attacks, paranoia and persecution complexes, memory problems, sleep disorders (insomnia, nightmares), physical and psychosomatic disorders (*i.e.* headaches, fainting, tachycardia, nausea, gastritis and hallucinations).

Cohen's K test was used to determine reproducibility. After completing a training program, a total of 35 researchers were involved in the survey. During training, particular emphasis was placed on how to approach young people and how to pose the questions relating to the "problems" encountered. Interviews lasted on average 10 - 15 minutes. STATA 8.0 software was used for data analysis.

RESULTS

A total of 2015 subjects were interviewed, with an average age of 25.1. Fifty-three percent were interviewed at the "Arezzo Wave" event, 29.3% at the "Street Rave" parade in Bologna and 17.5% at the concerts. Forty-two percent of interviewees were females, 3.4% foreigners, 66% lived with their family, 67% held jobs,

Table 1 | *Risk behaviour: percentage breakdown between sexes*

		Female	%	Male	%
Driving after having consumed alcohol	last month	232	27.5	487	41.6
	last year	321	38.1	639	54.5
	lifetime	412	48.9	817	69.7
Drug use	last month	390	46.3	703	60.0
	last year	481	57.1	815	69.5
	lifetime	602	71.4	979	83.5
Drugs mixed	last month	99	11.7	229	19.5
	last year	168	19.9	364	31.1
	lifetime	219	26.0	505	43.1
Drugs/alcohol mixed	last month	285	33.8	550	46.9
	last year	379	45.0	674	57.5
	lifetime	483	57.3	820	70.0

42% were students, 12% held jobs while continuing their studies, 27% had a middle school diploma, 61% had earned a secondary school diploma and 11% were university graduates. One in 5 subjects was under age 20, 1 in 2 was between 20 and 29 years of age and 5% were over 40. The average age was higher for males (25.5) than females (24.6).

Use of alcohol

Eighty-two percent of females and 88% of males habitually consume alcoholic drinks. Fifty-one percent of females and 42% of males reported drinking "at weekends only" while 31% of females and 46% males reported drinking "both during the week and at weekends". Over the last year, 36% of female and 44% of male respondents had drunk alcohol more than once a week, with 5% of females and 13% of males reporting drinking "every day".

Twenty-two percent of males and 14% of females gave a positive response to at least two CAGE test items: 20% of females and 29% of males thought that they should cut down on their drinking, 13% of females and 19% of males had been criticised for their drinking habits, 10% of females and 18% of males had drunk alcohol at least once immediately after getting up, and 10% of females and 15% of males felt guilty about their drinking habits.

Risk behaviour

Table 1 reports the use of drugs and risk behaviour during the respondent's lifetime, over the last year and in the last month. Higher risk levels were found for males and a

Table 2 | *Lifetime/last year/last month use of drugs: percentage breakdown between sexes*

	Female						Male					
	Lifetime	%	Last year	%	Last month	%	Lifetime	%	Last year	%	Last month	%
Marijuana	558	66.2	436	51.7	351	41.6	915	78.1	737	62.9	624	53.2
Hashish	475	56.3	380	45.1	326	38.7	863	73.6	720	61.4	635	54.2
Cocaine	235	27.9	154	18.3	76	9.0	485	41.4	329	28.1	172	14.7
Popper	163	19.3	61	7.2	20	2.4	378	32.3	186	15.9	65	5.5
Hallucinogenic mushrooms	144	17.1	80	9.5	22	2.6	345	29.4	182	15.5	50	4.3
Ecstasy	143	17.0	80	9.5	37	4.4	318	27.1	190	16.2	117	10.0
Amphetamines	129	15.3	72	8.5	42	5.0	307	26.2	191	16.3	115	9.8
LSD	120	14.2	42	5.0	21	2.5	312	26.6	133	11.3	50	4.3
Salvia divinorum	88	10.4	59	7.0	18	2.1	214	18.3	154	13.1	52	4.4
Opium	86	10.2	49	5.8	24	2.8	246	21.0	126	10.8	68	5.8
Ketamine	73	8.7	42	5.0	23	2.7	150	12.8	88	7.5	51	4.4
Psychiatric medication	53	6.3	20	2.4	8	0.9	114	9.7	47	4.0	23	2.0
Crack	30	3.6	18	2.1	9	1.1	92	7.8	52	4.4	25	2.1
Heroin	45	5.3	23	2.7	14	1.7	137	11.7	67	5.7	42	3.6
Benzodiazepine	19	2.3	8	0.9	4	0.5	55	4.7	30	2.6	13	1.1

high prevalence of risk behaviour was reported amongst females. Seventy-nine percent had used an illegal substance at least once in their lives, 64% in the last year and 54% in the last month. Thirty-six percent had used a mix of drugs in the same evening at least once in their lives, 26% in the last year and 16% in the last month. Sixty-five percent had mixed drugs and alcohol on the same evening at least once in their lives, 52% in the last year and 41% in the last month. Sixty-one percent had driven after drinking alcohol at least once in their lives, 48% in the last year, 36% in the last month.

Mind-altering substances

Table 2 reports separate statistics for males and females regarding the use of drugs in their lifetime, in the last year and in the last month. Respondents reported heavy use of various substances: 73% reported having used marijuana, 66% hashish, 36%, cocaine, 9% heroin. Over the last year 58% had used marijuana, 55% hashish, 24% cocaine and 4.5% heroin. Twenty-eight subjects had used intravenous injection.

Table 3 shows the average age at first use and the age of the subjects who had consumed drugs in last month, for each substance and with separate data for males and females. The average age at first use was 16.3 years and was higher for females than males, lowest for hashish and marijuana and higher for substances more recently introduced on the market such as *Salvia divinorum*, ketamine and hallucinogenic mushrooms. The average age of current consumers is 23.7 years and is higher for males than females, lowest for *Salvia divinorum* consumers and highest for heroin, cocaine and crack users.

With regard to those subjects who stated that they had used drugs in the last month, of the males 3.4% had started drug use in the previous year and 64% had been users for over 5 years; amongst females 4.6% had started taking drugs in the last year and 51% had been users for over 5 years. Over the last year, 10% of the female group had consumed cocaine for the first time, 9% *Salvia divinorum*, 7% hallucinogenic mushrooms, 5% ecstasy, popper or ketamine, 4% marijuana, opium or amphetamines and 2.1% heroin. In the male group, the statistics were 14% *Salvia divinorum*, 7% cocaine or opium, 6% popper or hallucinogenic mushrooms, 5% ecstasy, 4% ketamine or amphetamines, 3% marijuana and 1.6% heroin.

Table 3 | *Average age at first use and age of the subjects who had consumed drugs in the last month*

	Last month use		First use	
	F	M	F	M
Hashish	22.6	24.5	16.1	16.0
Marijuana	22.5	24.3	16.3	16.1
Psychiatric medication	21.5	24.5	17.5	18.4
Popper	21.3	23.0	17.6	18.3
LSD	21.8	23.9	17.6	18.0
Amphetamines	22.2	23.9	17.9	18.5
Heroin	23.1	25.7	18.3	18.6
Opium	22.2	22.2	18.4	19.8
Crack	23.0	25.5	18.5	20.0
Ketamine	20.4	23.3	18.5	20.1
Ecstasy	20.8	23.8	18.6	19.2
Cocaine	23.0	24.9	19.0	18.9
Hallucinogenic mushrooms	20.2	23.9	19.1	19.8
Benzodiazepine	21.3	24.3	19.6	18.8
Salvia divinorum	20.1	22.4	19.7	20.4

Problems

Over the last year, 6 out of 10 subjects had experienced psychological problems, the most frequent being depression (27%), anxiety (25.7%) and sleep disorders (23.7%). Three percent had been prescribed psychiatric medication and 1% had suffered from psychiatric disorders. Nine percent had addiction problems, while 0.5% had an overdose. Fifteen percent had experienced severe financial problems, 6% legal problems and 13% at least one road accident.

Females were more prone than males to depression, anxiety, panic attacks, paranoia, sleep disorders, as well as physical and psychosomatic problems, while the male group reported having experienced above all financial and legal problems, road accidents, addiction, memory disorders and hallucinations.

Table 4 shows the results of multivariate analysis conducted in order to define risk profiles for each type of problem encountered over the last year and risk behaviour during the same period. The following possible confounding factors used were: sex, age, nationality, professional condition, living arrangements, scholastic/academic achievement, use of alcohol during lifetime, CAGE test (at least two positive answers). 1996 subjects were included in this analysis.

With regard to the possibility of encountering financial problems, there was a statistically significant 95% higher probability for those who mixed several drugs on the same evening, for those who gave at least two positive replies to the CAGE test and for those who used drugs. As for legal problems: mixed drugs use, CAGE test positivity, use of drugs; road accidents: mixed drugs use, driving after drinking alcohol and CAGE. test positivity; addiction: use of drugs, mixed drugs use and CAGE test positivity; psychiatric problems: CAGE test positivity; anxiety symptoms: driving after drinking alcohol and CAGE test positivity; panic attacks: mixed drugs use and CAGE test positivity; paranoia: mixed drugs use, driving after drinking alcohol, CAGE test positivity, use of drugs; persecution complexes: mixed drugs use, CAGE test positivity; memory disorders: mixed drugs use, CAGE test positivity, use of drugs; sleep disorders: mixed drugs use and CAGE test positivity; physical and psychosomatic problems: mixed drugs use, CAGE test positivity, driving after drinking alcohol; hallucinations: mixed drugs use and CAGE test positivity; depression: mixed drugs use, CAGE test positivity, driving after drinking alcohol, use of drugs.

Table 4 | *Risk profiles related to each type of problem encountered over the last year and behaviour during the same period - Odds Ratio and 95% confidence limits*

	Financial problems	Legal problems	Road accidents	Addiction	Psychiatric problems	Anxiety	Panic attacks	Paranoia	Persecution complexes	Memory disorders	Sleep disorders	Physical problems	Hallucinations	Depression
Male	0.9 (0.6-1.1)	2.1 (1.3-3.5)	1.3 (0.9-1.7)	1.5 (1.0-2.2)	0.8 (0.4-1.7)	0.4 (0.3-0.5)	0.3 (0.2-0.5)	0.6 (0.4-0.7)	0.8 (0.5-1.3)	0.8 (0.6-1.1)	0.7 (0.6-0.9)	0.5 (0.4-0.6)	1.3 (0.8-2.0)	0.5 (0.4-0.6)
Middle school diploma	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Secondaryschool diploma	0.7 (0.5-0.9)	0.4 (0.3-0.7)	0.8 (0.6-1.1)	0.8 (0.6-1.3)	1.1 (0.5-2.5)	0.9 (0.7-1.2)	1.0 (0.7-1.4)	0.7 (0.5-0.9)	0.4 (0.3-0.7)	0.7 (0.6-1.0)	0.9 (0.7-1.1)	0.9 (0.7-1.2)	0.4 (0.2-0.6)	0.8 (0.6-1.0)
Universitydegree	0.5 (0.3-0.8)	0.1 (0.0-0.4)	0.7 (0.4-1.2)	0.6 (0.3-1.2)		1.3 (0.8-1.9)	0.7 (0.4-1.3)	0.3 (0.2-0.6)	0.3 (0.1-0.9)	0.4 (0.2-0.6)	0.9 (0.6-104)	0.9 (0.6-1.4)	0.4 (0.1-1.1)	0.8 (0.5-1.2)
Drug use	1.7 (1.1-2.7)	3.3 (1.2-8.6)	1.1 (0.7-1.7)	2.8 (1.5-5.6)	1.3 (0.4-3.6)	1.1 (0.8-1.6)	1.2 (0.7-1.9)	1.9 (1.2-3.0)	1.9 (0.9-4.1)	1.6 (1.0-2.4)	1.1 (0.8-1.6)	1.0 (0.7-1.6)	1.5 (0.5-4.4)	1.6 (1.1-2.3)
Drugs mixed	1.8 (1.3-2.4)	2.6 (1.6-4.2)	1.4 (1.0-2.0)	3.4 (2.3-5.2)	2.8 (1.1-7.2)	1.6 (1.2-2.2)	2.1 (1.4-3.2)	1.9 (1.4-2.6)	1.9 (1.1-3.3)	3.5 (2.6-4.7)	1.5 (1.1-2.0)	1.4 (1.1-2.0)	9.8 (5.3-17.9)	2.2 (1.7-2.9)
Drugs/alcohol mixed	0.9 (0.6-1.4)	1.1 (0.6-2.3)	1.2 (0.7-1.8)	0.7 (0.4-1.2)	0.3 (0.1-0.7)	0.9 (0.7-1.3)	0.7 (0.4-1.1)	1.4 (0.9-2.1)	0.7 (0.3-1.3)	0.9 (0.6-1.3)	1.1 (0.8-1.6)	0.9 (0.6-1.3)	1.3 (0.6-2.9)	0.7 (0.5-1.0)
Driving after havingconsumed alcohol	1.0 (0.7-1.3)	1.4 (0.9-2.2)	1.6 (1.2-2.2)	1.1 (0.8-1.6)	1.9 (0.9-4.0)	1.4 (1.1-1.8)	1.0 (0.7-1.4)	1.4 (1.1-1.9)	1.2 (0.7-2.0)	1.3 (1.0-1.7)	0.9 (0.7-1.1)	1.4 (1.1-1.8)	1.1 (0.7-1.8)	1.3 (1.0-1.7)
Two positive CAGE test responses	1.7 (1.3-2.3)	1.8 (1.1-2.7)	1.4 (1.0-2.0)	1.9 (1.3-2.7)	3.2 (1.5-7.2)	1.5 (1.1-1.9)	1.7 (1.2-2.5)	1.6 (1.2-2.2)	2.8 (1.7-4.5)	1.8 (1.3-2.4)	1.7 (1.3-2.2)	1.9 (1.4-2.5)	1.7 (1.1-2.7)	1.8 (1.4-2.4)

There was a statistically significant 95% higher probability for females of suffering from symptoms of anxiety, panic attacks, paranoia, depression, physical and/or psychosomatic and sleep disorders and for males regarding legal problems.

There was a statistically significant 95% lower probability in subjects with higher levels of academic achievements of experiencing financial, with social and legal problems, paranoia, persecution complexes, memory disorders and hallucinations.

Further multivariate analysis was performed in order to define profiles at risk related of each type of problem encountered over the preceding year with regard to the substances used over the same period *(Table 5)*. As possible confounding factors, the following were taken into account: sex, age, nationality, professional condition, living arrangements, scholastic/academic achievement, use of alcohol during lifetime, CAGE test responses (at least two positive answers), time elapsed since first use of drugs, age at first use of drugs and, with regard to the last year, mixed drugs use, mixing of alcohol with drugs, driving after drinking, and mind-altering substances used (in detail). 1215 subjects were included.

A statistically significant 95% association emerged between heroin and financial problems, legal problems, addiction, psychiatric problems, persecution complexes and depression; similar associations were highlighted for cocaine with problems of addiction and symptoms of anxiety and for opium and financial problems, memory disorders and physical and psychosomatic problems. Likewise, a statistically significant association (95%) was found between the abuse of psychiatric medication and psychiatric problems, symptoms of anxiety, sleep disorders and depression, for hashish use and financial problems, popper use and symptoms of anxiety, crack and sleep disorders and, finally, with hallucinations in users of LSD or hallucinogenic mushrooms.

DISCUSSION

The results of the survey confirm the high prevalence of drug use (especially of hashish, marijuana and cocaine) and a drop in the average age at first use amongst youngsters participating in musical events. With regard to recently introduced substances, the most common were found to be first *Salvia divinorum*, followed by cocaine, hallucinogenic mushrooms, opium, popper and ketamine.

Clear evidence emerged regarding the potential risks deriving from current changes in drinking patterns amongst youngsters, who are decidedly "buzz"-oriented, as well as the high prevalence of risk behaviour such as the use of mixtures of drugs on the same evening, the mixing of alcohol and drugs and driving after drinking alcohol. It is also important to note the occurrence of serious financial problems, a high prevalence of road accidents and legal problems, and the high number of subjects suffering from depression, anxiety, sleep disorders, memory disorders and physical and psychosomatic problems. It should however be considered that the context in which the survey was conducted, the various techniques used to approach the young people interviewed and the different ways of posing the questions used by individual researchers may have influenced certain aspects of the study: indeed, reports in the literature indicate the likelihood of exageration in answers given regarding substance use and an altered perception of symptoms and problems by habitual drug users [3, 17]. Most of the problems reported were associated with polydrug use and CAGE test positivity, and the "protective" effect of education (as reflected in the school diploma/university degree obtained), is also noteworthy. The role played by drug consumption has yet to be defined with regard to whether it is a cause or an effect of psychological problems and whether it can be linked to certain places and contexts [4, 5, 11, 14, 15, 18, 19] or whether it is due to the different potential social and psychological functions that young men and women attribute to the effects of the various substances [1, 20].

In agreement with data reported by other authors [21-28], this study found a higher probability of anxiety, panic attacks, paranoia, depression, sleep disorders and psychosomatic problems amongst females, as well as financial, legal and psychiatric problems, persecution complexes and depression in subjects reporting heroin use in the previous year, anxiety and psychiatric problems for cocaine users, memory disorders and psychosomatic problems for opium users, sleep disorders related to crack use, anxiety in subjects who used popper, and hallucinations in users of LSD and hallucinogenic mushrooms.

The probability of road accidents was found to be higher amongst those with CAGE test positivity, those who drove after drinking and who used a mixture of drugs on the same evening.

The high prevalence of drinking, drugs use and high-risk behaviour amongst female respondents was of particular interest, and the young women who reported consuming drugs were on average younger than the males and started using these substances later: in the past year, 1 in 10 of these young women had started to use cocaine for the first time.

Data available regarding the situation on the European level [29-31] indicate that as drug use prevalence has gradually increased, so has the percentage of female consumers, and that the differences in variation of use rates are less marked among 15 and 16 year-olds than among adults.

It must be specified that, on the basis of the data collected, it is not possible to establish whether our data indicating high drug consumption amongst young women can be considered a trend or a contingent situation that could subside over time. The results of a recent study [1] underlined the different motivations cited by users of certain types of drugs (*i.e.* stimulants, cocaine) according to their age and sex: amongst females, the use of drugs as a "social support" tool and to obtain specific physical effects (weight loss, having sex, staying awake) would appear to prevail, whereas amongst males, prevalent

Table 5 | *Risk profiles related to each type of problem encountered over the last year: drug use – Odds Ratio and 95% confidence limits*

	Financial problems	Legal problems	Addiction	Psychiatric problems	Anxiety	Paranoia	Sensation of persecution	Memory disorders	Sleep disorders	Physical problems	Hallucinations	Depression
Heroin	2.5 (1.3-4.7)	2.2 (1.0-4.7)	2.6 (1.3-5.3)	8.7 (1.3-57.5)	1.0 (0.5-1.9)	1.4 (0.7-2.7)	3.8 (1.5-9.8)	1.1 (0.6-2.1)	0.6 (0.3-1.1)	1.1 (0.6-2.2)	0.5 (0.2-1.2)	1.8 (1.0-3.4)
Benzodiazepine	0.7 (0.3-1.8)	1.4 (0.5-4.1)	1.9 (0.7-5.2)	0.3 (0.0-2.4)	1.4 (0.6-3.5)	1.6 (0.6-4.1)	1.6 (0.4-6.0)	0.8 (0.3-2.2)	0.8 (0.3-2.0)	0.8 (0.3-2.1)	0.7 (0.2-2.2)	1.4 (0.6-3.5)
Cocaine	0.8 (0.5-1.2)	1.3 (0.7-2.4)	1.9 (1.1-3.1)	0.2 (0.0-1.0)	1.5 (1.0-2.1)	1.2 (0.8-1.8)	0.5 (0.2-1.0)	1.1 (0.8-1.7)	1.3 (0.9-1.8)	0.9 (0.6-1.3)	1.5 (0.8-2.7)	1.0 (0.7-1.5)
Crack	0.9 (0.4-1.9)	1.3 (0.6-3.0)	1.1 (0.5-2.5)	1.8 (0.2-18.5)	1.1 (0.5-2.3)	0.8 (0.4-1.7)	0.5 (0.1-1.9)	0.7 (0.3-1.4)	2.4 (1.2-4.8)	0.9 (0.4-1.9)	1.9 (0.9-4.4)	1.0 (0.5-2.0)
Amphetamines	1.0 (0.6-1.7)	0.7 (0.3-1.4)	1.0 (0.5-1.8)	2.9 (0.4-19.3)	1.1 (0.7-1.8)	1.2 (0.7-1.9)	0.9 (0.4-2.2)	1.2 (0.7-1.9)	1.4 (0.9-2.2)	1.0 (0.6-1.7)	1.5 (0.8-3.0)	1.2 (0.8-1.9)
Hashish	2.5 (1.4-4.6)	1.7 (0.6-4.5)	0.9 (0.4-1.8)	0.5 (0.1-2.5)	1.3 (0.8-2.0)	0.9 (0.6-1.5)	1.1 (0.5-2.5)	1.4 (0.9-2.4)	0.8 (0.5-1.3)	0.9 (0.5-1.4)	0.8 (0.3-2.3)	1.1 (0.7-1.6)
Marjiuana	0.6 (0.4-1.2)	1.4 (0.4-4.8)	1.5 (0.6-3.7)	0.3 (0.1-1.4)	0.8 (0.5-1.3)	0.9 (0.5-1.7)	1.3 (0.5-3.8)	1.1 (0.6-1.9)	1.7 (1.0-2.9)	1.3 (0.7-2.3)	1.0 (0.3-3.4)	1.4 (0.8-2.3)
LSD	1.0 (0.5-1.7)	1.1 (0.5-2.2)	0.7 (0.3-1.3)	2.5 (0.3-21.7)	0.8 (0.5-1.4)	0.7 (0.4-1.2)	0.8 (0.3-2.2)	1.0 (0.6-1.6)	1.3 (0.8-2.2)	1.0 (0.6-1.8)	2.1 (1.1-4.0)	1.0 (0.6-1.7)
Ketamine	1.1 (0.6-2.0)	2.0 (1.0-4.2)	1.0 (0.5-2.0)	4.1 (0.4-40.0)	0.6 (0.3-1.0)	0.8 (0.4-1.4)	1.9 (0.8-5.0)	0.9 (0.5-1.6)	1.0 (0.6-1.9)	1.1 (0.6-2.1)	1.3 (0.6-2.5)	0.8 (0.5-1.4)
Hallucinogenic mushrooms	1.1 (0.7-1.8)	1.4 (0.7-2.5)	1.0 (0.6-1.7)	0.5 (0.1-3.6)	0.9 (0.6-1.4)	1.3 (0.8-1.9)	1.0 (0.5-2.1)	1.4 (0.9-2.1)	0.7 (0.4-1.1)	1.3 (0.8-2.0)	1.8 (1.0-3.2)	1.2 (0.8-1.8)
Salvia Divinorum	0.7 (0.4-1.1)	1.0 (0.5-1.8)	1.0 (0.6-1.7)	0.3 (0.0-2.2)	0.8 (0.5-1.3)	1.0 (0.6-1.5)	1.2 (0.6-2.5)	1.2 (0.8-1.8)	0.7 (0.4-1.1)	0.9 (0.5-1.4)	1.1 (0.6-1.9)	0.9 (0.6-1.4)
Opium	2.4 (1.4-3.9)	2.0 (1.1-3.7)	1.3 (0.7-2.3)	0.1 (0.0-1.0)	1.1 (0.7-1.8)	1.6 (1.0-2.7)	0.8 (0.3-1.8)	1.8 (1.2-2.9)	1.5 (1.0-2.5)	1.8 (1.1-2.9)	2.0 (1.1-3.7)	1.1 (0.7-1.7)
Ecstasy	1.0 (0.6-1.7)	1.2 (0.6-2.4)	1.4 (0.8-2.5)	0.2 (0.0-2.1)	1.0 (0.6-1.6)	1.6 (1.0-2.5)	1.8 (0.8-4.1)	0.9 (0.6-1.5)	0.7 (0.4-1.8)	1.3 (0.8-2.1)	0.7 (0.5-1.6)	1.2 (0.8-1.9)
Popper	1.0 (0.6-1.6)	1.4 (0.7-2.5)	1.0 (0.6-1.6)	3.4 (0.6-20.3)	1.8 (1.2-2.7)	1.5 (1.0-2.4)	1.2 (0.6-2.6)	1.2 (0.8-1.8)	1.4 (0.9-2.2)	1.1 (0.7-1.8)	0.9 (0.8-4.7)	1.1 (0.7-1.6)
Psychiatric medication	0.8 (0.4-1.7)	0.5 (0.2-1.1)	0.8 (0.3-1.8)	53.8 (7.6-382.7)	3.3 (1.6-6.6)	1.5 (0.8-3.1)	0.3 (0.3-2.7)	0.5 (0.2-1.0)	2.6 (1.3-5.1)	1.8 (0.9-3.6)	1.9	2.6 (1.3-5.1)

reasons appear to be interest in trying new drugs and in enhancing their effect; younger users' motivation is "to forget about problems", while older users' aim to increase euphoria or use drugs as a sleeping aid.

Our study results highlight the need to direct healthcare policy regarding drugs in different ways for subjects with addiction problems and for those who are simply recreational consumers. For the latter, public prevention policies should take into consideration not only context of use (nightclubs, rave parties, concerts, etc.), but also the differences in sex and age which affect the reasons underlying use and the meanings attributed to the various substances. In addition, different target subjects and objectives should be considered depending upon the type of substance used.

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