Raimondo Maria Pavarin

Risks, substances and consumers

Studies and surveys in the metropolitan area of Bologna

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via Sottoriva, 9
46100 Mantova (MN), Italy
P. IVA 02346110204
tel. 0376/1810639
http://www.universitas-studiorum.it
info@universitas-studiorum.it

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TABLE OF CONTENTS

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Introduction

This publication reports the results of some studies and surveys carried out in the metropolitan area of Bologna, aimed at a local approach towards new trends in psychoactive substance use and misuse, within the Local Pass project, with the financial support of the Grant Agreement JUST/2012/DPIP/AG/3600 Programme of the European Union.

The Metropolitan area of Bologna is a densely populated territory in the region called Emilia Romagna, in north-eastern Italy. It is made up of fifty municipalities over an area of around 3,000 km², with a population of more than 850,000 inhabitants.

1) Quantitative studies on the consumption of illegal substances: prevalence among the general population, Emergency Department (ED) accesses, hospitalizations and drug addiction service (SERT) users.
2) Quantitative studies on the use and abuse of alcohol.
3) Epidemiological studies on lethal and non-lethal overdoses.
4) Qualitative studies with groups of consumers, operators and experts in relation to the market, new trends, risk assessment, perceived disorders, consumption phenomenology and possible harm reduction self-practices.
5) The final chapter illustrates the experience, data and analyses of the early alert system on illegal drugs in the province of Bologna, whose primary purpose is uploading to the web and sharing the information on circulating substances and traumatic events available among professionals and services operating on the territory.

Overall, the aspects emerging from the various studies contribute to a homogenous interpretation of the phenomenon, that we can so summarize:

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- the substances use among consumers is decreasing because of the economic crisis, but the quality/price ratio of circulating substances is worsening;
- a high diffusion of cannabis among the general population emerges, with similar addiction models to those of tobacco;
- the presence on the market of "white heroin" must be emphasized, as well as an increased use of ketamine; some cases are reported of cocaine mixed with harmful substances;
- heroin, whose consumption is already decreasing, is mainly smoked;
- among SERT clients, an incident case on ten is related to addiction to other substances than heroin, cocaine and cannabis;
- the ED accesses for use/abuse of illegal substances are generally increasing, but decreasing at night and during the weekends; many cases occur, related to the mixed consumption of more illegal substances and alcohol;
- the problematic consumption of cannabis and cocaine is increasing, whereas that of heroin is decreasing;
- the number of deaths from overdose is enlarging; numerous cases of lethal and non-lethal overdose concern ex SERT clients, non-natives and non-residents; the risk of death increases depending on the urbanisation rate.
- The youngest tend to consider alcohol as a real psychoactive substance.

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Quantitative studies

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1. Consumption of psychoactive substances among the general population

Aims

The aim of this study is an assessment of consumption of (legal and illegal) psychoactive substances among the residents of the metropolitan area of Bologna aged between 18 and 64 years.

Special attention is paid to the identification of particular substances (new drugs?), consumption styles (binge drinking, mixes of different substances) and involvement levels.

In order to examine the existence of possible health problems, psychical symptoms and forms of addiction, we opted for an open question.

Subjects who used substances at least once in their lifetime were asked whether, as a consequence of such behaviour, they turned to health or social services or to specialists.

Methods

For the purposes of this study, a separate "Pro Quota Sampling" was carried out using different categories related to gender, age class and country of birth (natives/non-natives).

The participants were recruited in central places and in some peripheral neighbourhoods of Bologna on prearranged days and at preset times. The interviews lasted average 35 minutes and were carried out by 22 specifically trained researchers.

A semi-structured questionnaire was used, specifically created for this type of work and obtained by employing an analogous instrument employed in previous researches (Pavarin et al., 2013 A). Twenty subjects were interviewed in sequence by two different interviewers; the Kappa test was instead used in order to verify the comprehension of the questions and the congruence

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of the answers (Amstrong et al., 1992). The variables employed obtained a higher kappa value than 0.50.

The questionnaire included only socio-demographic data (gender, age, nationality, marital status, education level, professional situation, amount of money available on a monthly basis), use of illegal substances and alcohol (lifetime, last year).

The information requested concerned the consumption trajectory (age of first and last use), the presence in consumption situations and whether such substance was ever offered, in relation to every single psychoactive substance. Furthermore, information was requested as to the average monthly expenditure and the main modality of use, and one more open question was added on the reasons for such use. The open answers were re-coded into dichotomous variables (yes or no) after a qualitative analysis of the text by a multidisciplinary team formed by sociologists, psychiatrists, psychologists and educators (Pavarin et al., 2013 B).

In order to evaluate the involvement in the consumption of illegal substances, the Drug Abuse Screening Test (DAST 10) was employed (Skinner, 1982).

As to alcohol, the question was posed whether the subjects thought they had drunk much over the last 30 days, specifying the number of alcohol units related to the latest episode, the average monthly expenditure and the type of alcoholic drink. The consumption of at least six alcohol units on whichever possible occasion over the previous 30 days was defined as binge drinking (Valencia-Martín et al., 2008). Also the C.A.G.E. test was carried out (Bernadt et al., 1982).

Results

In the period between March 2013 and April 2014, 838 residents of Bologna metropolitan area, aged between 18 and 64 years, were interviewed: 51% females, 19% born abroad

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(non-natives), average age 42.5, 49% unmarried, 39% married, 12% widowed/separated/divorced.

78% of them have a medium-high education level (43% high school diploma, 35% degree), 69% work, 15% are students (10% university, 5% high school), and 23% do not either study or work.

The average monthly amount of money available is 1084 euros, higher among males (1183) than among females (990 P<0.0001).

Alcohol – 79% of the interviewed subjects have drunk an alcoholic drink over the last year, with a higher prevalence among males (86%) than among females (73% P<0.0001).

Consumption had lasted average 25.7 years (males 26.9 years, females 24.4 P <0.0001). The average first use occurs at the age of 16.1 years (males 15.6, females 16.8 years P <0.0001), and the average monthly expenditure is 42.4 euros (males 47.8 euros, females 35.8 euros P 0.003).

42% of the interviewed subjects drink to improve their social skills (38% males, 46% females P 0.04), 36% for their own pleasure, 21% for the taste and 13% in order to have fun.

24% think they have drunk a lot over the last month (males 31%, females 18%, P 0.001), 16% are positive at the binge drinking test (males 23%, females 10% P<0.0001), 8% are positive in three items of the CAGE test (males 11%, females 6% P 0.007).

Illegal substances - 45% of the interviewed subjects were present in situations of use of illegal substances, 53% were offered them, 48% tried them at least once in their lives and 23% used them during the last year. The recent use prevalence is higher among males and under the age of 25 (between 18 and 24 years 52%, between 25 and 34 years 45%, between 35 and 64 years 14%, P<0.0001).

As far as specific substances are concerned, 47% tried cannabis at least once in their lives, 17% cocaine, 10% MDMA, 5%

heroin, 3% benzodiazepines, 2% LSD, 1.4% ketamine, 1.2% hallucinogenic mushrooms, 0.7% opium, 0.5% speed and amphetamines, 0.4% poppers, 0.2% morphine, *salvia divinorum* and methadone, and 0.1% inhalants and crack.

As to recent use, 21% used cannabis, 4.5% cocaine, 3.3% MDMA, 1.2% ketamine, 1.1% benzodiazepines, 0.7% heroin, 0.7% LSD, 0.5% opium, 0.5% speed, 0.1% hallucinogenic mushrooms, and 0.1% poppers.

As to the modality of use, 5 subjects declared that they assumed heroin by intravenous injection.

Considering the three variables: having used drugs at least once in one's life, having been present in situations of use and having been offered drugs, 58% had at least one contact with an illegal substance, 56% with cannabis, 26% with cocaine, 14% with MDMA and 11% with heroin.

Table 1 reports in detail, for each substance, the lifetime and last year prevalence of use, the share of subjects present in situations of use and of those who were offered it. It must be noted that, excluding cannabis (whose recent use concerns one interviewed person out of five), cocaine (5%) and MDMA (consumed by a share fluctuating between 3% and 4% of the interviewed subjects), the percentage related to all other substances is lower than 1%.

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Table 1: Substances circulating in the metropolitan area of Bologna

	Present	Offer	Lifetime	Last year
Cannabis	42.8	50.1	46.7	21.0
Cocaine	18.0	21.7	16.5	4.5
MDMA	10.1	11.9	9.6	3.3
Heroin	7.6	7.6	4.5	0.7
Benzodiazepines	3.3	2.6	2.5	1.1
LSD	1.7	2.2	2.0	0.7
Ketamine	1.8	1.8	1.4	1.2
Hallucinogenic mushrooms	1.1	1.3	1.2	0.1
Opium	0.6	0.7	0.7	0.5
Speed	0.5	0.6	0.5	0.5
Amphetamines	0.4	0.2	0.5	
Poppers	0.2	0.4	0.4	0.1
Morphine	0.1		0.2	
Salvia divinorum		0.2	0.2	
Inhalants	0.1	0.1	0.1	
Crack	0.1		0.1	
Methadone on the grey market			0.2	

The first use age is 18, and the average length is of 12 years, longer among males (Table 2). Among those who have recently consumed drugs, the average monthly expenditure is 151 euros.

As far as involvement with consumption is concerned, of all interviewed subjects 12% are positive at the DAST 10 test, with higher odds among males (Odds Ratio 2.1 95% CI 1.22-3-30), increasing with age (18/24 years OR 1, 25/34 years OR 2.2 95% CI 1.2-4.0, 35/64 years OR 3.0 95% CI 1.4-6.8).

As to the motivations connected with cannabis consumption (which is the most widespread substance), the interviewed subjects declare that they use it to relax (32%), for their own pleasure (22%), to improve their social skills (21%) and to have fun (17%).

Another aspect considered in this research concerns the per-

ceived state of health, from which it emerges that at least 1% of the interviewed subjects declare that they are dependant on illegal substances and 3% have turned to treatment centres as a consequence of problems due to drug use.

Table 2: Age, length, expenditure, involvement

	Total	**Males**	**Females**	**p**
	(838)	(407)	(431)	
Lifetime	48.3	57.7	39.4	<0.0001
Last year	23.3	28.0	18.8	0.002
Average first use age	18.4	18.2	18.6	0.361
Average length in years	12.1	13.5	10.4	0.003
Average monthly expenditure	151	203	62	0.292
Positive DAST 10 test	11.8	16.5	7.4	<0.0001

DISCUSSION

Interesting data emerge from the study, describing the diffusion of the illegal substances use (mainly cannabis) in large sectors of the population, although recent use is more likely under the age of 25.

With time, cannabis consumption has generated similar addiction models to those of tobacco; besides, another use emerges, too, consisting of attempts of self-care connected with several illnesses.

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2. Problematic consumption of illegal substances

The drugs and drug addiction sector is going through a phase of deep transformation for what concerns both the epidemiological context and the reorganization of assistance. Not only do we have to consider the evaluation problems connected with the illegal and hidden nature of consumption habits, but also those related to the diversified composition of the substances introduced into the market, to the mutations of the population to which interventions are addressed and to the problems connected with the chronic nature of drug addiction. Therefore, the knowledge and the constant monitoring of a continuously evolving phenomenon, together with the subjects' characteristics and to the health and social problems emerging, become priorities, in order to orient specific interventions.

Based on the results of the studies carried out over the last few years in the metropolitan area of Bologna, it is possible to identify different drug consumption styles, with which various behaviours and risks can be associated: consumption, problematic consumption and addiction. Consumption-related problems can be associated with inexperience, use of substances by the unknown composition, lack of knowledge of the substances' effects, concurrent assumption of alcohol, road accidents, psychical or economic problems. As regards problematic consumption, the risk emerges of future addictions, health problems, relevant economic problems, hospitalizations, overdoses and pending suits. Problematic consumption almost always implies a medical intervention; addiction is dealt with by the drug addiction public and private service.

Based on the results of researches, it is not always possible to clearly distinguish problematic consumption from addiction, but we can pinpoint groups with different socio-economical and

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demographical characteristics, levels of risk awareness and approaches to the services. It is a highly complex phenomenon, with an outstanding impact on the general population, which cannot be simplified by basing interventions exclusively upon consumption control and repression.

Aims

The aim of this study, repeated every year since 2001 in the metropolitan area of Bologna, is an accurate analysis of the bracket of problematic consumption, an estimate of undeclared consumption (the dark number) and of the impact on the health system.

Methods

Case definition – Subjects resident in the metropolitan area of Bologna aged between 15 and 64 years, who turned for the first time to a public or private services for problems caused by the use/abuse of illegal substances, were selected. The reference period ranges between 2004 and 2013; the territory is the metropolitan area of Bologna.

The data relating to hospital dismissals and accesses to the emergency units were provided by the IT system of the Bologna Local Health Authority; the data relating to the SERT users were gleaned from the digital social and health folders in which, starting from 1978, subjects are distinguished by the date of first admittance.

Each person may have had contacts with several intervention sectors and the information was collected upon first contact. The cases were selected from the IT systems of SERT (10 health services), emergency departments (9 units), and hospitals (10 structures).

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Variables relating to age, gender, country of birth, residence, substance of abuse, contact sector, date of contact were used. The substances of abuse may have been more than one, excluding the SERT, where the primary substance was considered. It is worth mentioning that, on the grounds of the selection criteria, the substance of abuse could not be specified either in emergency departments or in hospitals.

Data sources – At the SERT a digital regional folder is used to collect the data upon first admission, the personal data, health data, treatments undertaken and substances of abuse. The admission involves the definition and start-up of a therapeutic project agreed upon with the user in line with the diagnostic evaluation.

The examinations correlated to the abuse of illegal substances were selected from the emergency unit databases by using the keywords gleaned from the ICD IX handbook and. The information was retrospectively obtained and each case was individually analysed by a team made up of sociologists, psychologists, psychiatrists and epidemiologists (Pavarin et al., 2011).

As regards hospital admissions, the data from the hospital dismissal forms (HDF) were used and, on the grounds of the ICD-IX classification, the subjects with dismissal diagnosis (both principal and secondary) correlated to psychosis induced by drugs, drug addiction, abuse of drugs without addiction, poisoning from opioids or psychotrope substances were selected (Pavarin, 2014). The diagnoses considered are the following: drug-induced psychoses (ICD IX 292); drug addiction (ICD IX 304), drug abuse without addiction (ICDIX 305), opioid poisoning (ICD IX 965) and psychotropic substance poisoning (ICD IX 969).

Statistical analyses – . As to the dark number estimate, the two-source capture/recapture method was employed (A*B/C) and the related confidence intervals were calculated as amounting

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at 95% confidence limits : A) the subjects who used the SERT services (excluding those who were assisted only in prison); B) the subjects dismissed by hospitals and private rehab centres operating within the national health service; C) the subjects in common between the two sources (Hartnoll et al., 1985; Hook et al., 1995; Pavarin et al., 1998). For all estimates, subjects aged between 15 and 64 years were employed; for illegal substances, subjects with abuse of opioids, cocaine and cannabis[1].

Incidence and prevalence are calculated by referring only to the residents aged between 15 and 64 years, separately considered by gender and nationality (resident users/resident population *1000). The information on resident population was acquired from the website of Regione Emilia-Romagna[2], while that on the foreign resident population was from that of ISTAT[3]. Statistical analyses were carried out using the SPSS 11.0 and STATA 11.0 softwares.

Results

New cases among residents are increasing (incidence) of subjects with problematic consumption of cocaine, while those concerning heroin are diminishing (table 2).

1. The detailed data are visible on the website http://www.ausl.bologna.it/oem/i-rapporti-sulle-diepdenze-in-area-metropolitana
2. http://www.regione.emilia-romagna.it (last visit 01/10/2014).
3. http://demo.istat.it/ (last visit 01/10/2014).

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Table 1: Year 2013 Metropolitan area of Bologna

	2013	2012	2011	2010	2009
Subjects	3461	3440	3636	3862	3771
% new contacts	21.3	21.5	22.8	21.7	23.8
Dark number estimate	5583	4733	4149	4399	4367
Characteristics					
Average age	38.1	37.9	38.1	37.7	37.0
% females	18.0	19.3	20.8	21.0	20.5
% non natives	21.9	21.5	20.5	19.7	18.2
% non residents	26.9	29.4	29.2	28.0	29.0
% homeless people	4.9	3.8	3.4	5.8	5.5
Substances					
% opioids	71.5	75.5	74.3	72.9	75.3
% cocaine	26.6	23.9	21.7	23.8	30.3
% cannabinoids	15.1	12.1	10.3	9.8	11.0
% benzodiazepines	1.6	2.2	2.8	2.6	2.5
% intravenous use	34.1	36.5	37.5	38.1	36.4

The number of deaths from overdose is growing – During 2013, in the metropolitan area of Bologna, 19 deaths from overdose occurred, increasing from the previous years (eight deaths in 2011, sixteen in 2012): 95% males, 42% non residents in this area, 25% non natives, average age 38.7.

Emergency Department accesses due to overdoses were 113, unaltered from 2012 (111 accesses) and increasing from 2011 (82 accesses).

The quantity of heroin is increasing (31 Kg in 2013, 9 Kg in 2012) as well as that of cocaine (35 Kg in 2013, 28 Kg in 2012) confiscated by law enforcement agents, while hashish (38 Kg in 2013, 158 Kg in 2012) and marijuana (68 Kg in 2013, 171 Kg in 2012) are diminishing.

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As far as the health system situation is concerned, among the subjects assisted by the SERT the share is increasing of users with at least one test done: overall, 24% tests HCV positive and 6% tests HIV positive; these data are unaltered from the previous years.

Problematic consumers – The number of problematic drug consumers is stable. 3461 subjects with problematic drug consumption were included in the study: 72% opioids, 27% cocaine, 15% cannabis, 2% Benzodiazepines, 13% concurrent abuse of alcohol, 2% concurrent abuse of medicines.

21% are new contacts, 27% are residents outside the metropolitan area, 22% are non natives and 5% are homeless people.

83% are assisted by the SERT, 18% are in prison, 20% previously turned to an Emergency Department, 5% were dismissed by a hospital for drug-related problems, 4% were assisted by the Mobile Methadone Unit.

Compared with the previous years, the overall number of contacts is slightly increasing, while the accesses due to use of opioids are decreasing and those due to the use of cocaine or cannabis alone are more numerous.

The socio-economic and age-related characteristics are problematically changing: the number of residents is increasing, as well as that of non natives and of homeless people; non residents and unemployed people are diminishing.

The average age of non-residents is around 40 years, the number of Emergency Department accesses is increasing (20%), like that of abusers of cocaine alone (15%) and cannabis alone (7%); opioid consumers are diminishing (72%), like accesses from all other sources.

Among non-residents (excluding the subjects with access to prison only) the average age is increasing (34.8 years), like the share of non natives (26%) and of consumers of cannabis alone

(10%); the percentages of females (16%), of opioid consumers (70%) and of cocaine alone (8%) are decreasing.

The number of new contact is stable (737 cases), with an increase in the share of subjects with abuse of cocaine alone (28%) and of cannabis alone (21%), of Emergency Department accesses (47%) and of residents in the metropolitan area (25%). The average age is instead diminishing (32 years), like the percentage of females (17%), non-natives (32%), inmates (17%), SERT users (45%) and subjects with abuse of opioids (34%).

Incidence of the phenomenon and dark number estimate – Among residents, while new cases of problematic consumption of illegal substances are increasing (incidence 0.76 out of ten thousand residents in 2013, compared with the 0.60 of 2012); the use of heroin is diminishing and that of cocaine is increasing (table 2).

Table 2: Year 2013 Metropolitan area of Bologna: Incidence on one thousand residents between 15 and 64 years

	Illegal substances			**Opioids**			**Cocaine alone**		
	2013	**2012**	**2011**	**2013**	**2012**	**2011**	**2013**	**2012**	**2011**
Males	1.19	0.90	1.11	0.23	0.24	0.39	0.35	0.23	0.26
Females	0.33	0.30	0.40	0.09	0.12	0.14	0.04	0.03	0.05
Natives	0.71	0.54	0.61	0.15	0.17	0.25	0.18	0.11	0.15
Non-natives	1.02	0.92	1.08	0.21	0.19	0.37	0.25	0.25	0.18

It must be noted that the incidence increases for all illegal substances among both natives (in particular, concerning cocaine) and non-natives.

One of the peculiarities of our territory is the high number of

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non-residents who turn to health structures. In order to assess the evolution of this phenomenon, the following elements were calculated: A) incidence and prevalence on the whole resident population; B) the dark number estimate, diversified by residence and nationality. Such calculation emphasizes an increased estimate of the number of subjects with problems due to the use of whichever illegal substance (5583 in 2013, compared with 4733 in 2012), among both residents and non-residents.

As to specific substances, the estimated number of problematic consumers of cocaine alone and cannabis alone proves to be increasing, while that of opioid consumers is decreasing.

As far as residents alone are concerned, in comparison with 2012 both prevalence and incidence are increasing. It must be noted that incidence proves to be increasing under the age of 40, but then remains stable.

Two are the most relevant aspects emerged: on the one hand, the subjects with problems due to the consumption of illegal substances keep permanently in contact with the various services; on the other hand, such phenomenon, thoroughly considered, is increasing, mainly among subjects aged between 20 and 30 years.

Opioid consumers – Over 2013 the service system was contacted by 2474 opioid consumers (generally decreasing), by the average age of 39.4 years (increasing), of which 20% were females (decreasing), 20% non-natives, 42% residents in Bologna, 29% residents outside the metropolitan area (decreasing), 4% homeless (increasing), one out of three tested HCV positive and 7% tested HIV positive. The majority of them has problems of heroin addiction, and 95% are assisted by a SERT. One out of three has a medium-high education level, little than half of them do not work, one out of two assumed substances by intravenous injection.

As to the relation with the service system, 18% were in prison

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(decreasing), 5% were assisted by the Mobile Methadone Unit, 4% were dismissed by a hospital with a drug-related diagnosis, 11% turned to an Emergency Department (decreasing).

The estimated number of opioid consumers on the metropolitan territory is 3206 subjects (fluctuating between 2746 and 3667), and proves to be increasing from the previous year (2678 subjects in 2012). Also the ratio unknown/known subjects to SERT is increasing, therefore, every 10 who turn to SERT services, 16 unknown subjects are estimated (14 in 2012).

Problematic consumers of only cocaine – Over 2013 508 subjects were contacted who assumed only cocaine (increasing), by the average age of 37 years (increasing), 8% females (decreasing), 27% non-natives (increasing), 34% residents in Bologna (increasing), 29% residents outside the metropolitan area (decreasing). At least one out of five holds a high school diploma (increasing), and little more than half do not work regularly (decreasing).

Access to all services is increasing: 75% were assisted by a SERT, 31% were in prison, 21% turned to an Emergency Department, 5% were dismissed by a hospital.

The number of problematic consumers of only cocaine in the metropolitan territory is estimated as amounting to 743 subjects (fluctuating from 373 to 1113), a datum that is increasing (641 in 2012). The dark number is stable: both in 2012 and in 2013, every 10 that turned the SERT services, 30 unknown subjects were estimated.

Problematic consumers of only cannabinoids – This is a non homogeneous subgroup that does not represent the universe of cannabis consumers.

Over 2013, 238 subjects were contacted, by the average age of 26.9 years, 13% females, 25% non-natives, 32% residents in Bologna (increasing), 30% residents outside the metropoli-

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tan area. In comparison with the previous years, the average age proves to be decreasing.

As to the relation with the service system, 45% were treated in a SERT, 15% were dismissed by a hospital, 11% were in prison, 37% turned to the Emergency Department. In comparison with last year, hospital and Emergency Department accesses are increasing.

The dark number estimate of problematic consumers of only cannabinoids in the metropolitan territory is of 505 subjects (from 175 to 831), which proves to be higher than in 2012. It is estimated that every 10 subjects who turn to the various services, at least 61 are unknown (with specific problems).

Discussion

Based on the analysis of the data related to the problematic consumption of illegal substances and to the abuse of legal substances, in 2013 some trend lines are confirmed and some novelties emerge, compared with the previous years: the number of deaths from overdose is increasing; that of problematic drug consumers is stable (heroin is decreasing, while the use of cocaine and cannabis is increasing); the socio-economic and age-related characteristics are changing, and the percentage of non-natives and of homeless people is increasing.

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3. The evolution of SERT client's characteristics

Aims

The purpose of this research is the analysis of the evolution in time of the characteristics of clients who turned to the drug addiction services (SERT) of Bologna metropolitan area.

Methods

Case definition – Subjects resident in the metropolitan area of Bologna who turned for the first time to public services for problems caused by the use/abuse of illegal substances (SERT), were selected. The period of reference ranges between 1978 and 2013; the territory is the metropolitan area of Bologna.

The data were drawn from the digital social and health folders in which, starting from 1978, the subjects are distinguished by the date of first admittance. Variables relating to age, gender, country of birth, residence, substance of abuse and date of first contact were employed.

Results

In the period between January 1st 1978 and December 31st 2013, the SERTs in the metropolitan area of Bologna accepted to assist 6420 residents (average age 29.6 years, 20% females, 7% non-natives) for problems due to the abuse of or the addiction to illegal substances.

At the moment of their acceptance by the SERT at the first access, at least 50% had a regular job, 35% were unemployed and 4% were students; as to their educational qualification, 3% held a degree and 27% held a high school diploma.

With time, the first access average age and the percentage of non natives are increasing, while the share of females is diminishing.

As far as the professional situation is concerned, the shares of students and unemployed people are increasing. As to the educa-

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tional qualification, the subjects with a medium-high one prove to be increasing (Table 1).

Table 1: Period 1988-2013 Addiction treatment public centres in the Metropolitan area of Bologna, treated clients

	<1990	1990-94	1995-99	2000-04	2005-09	2010-13
Number	517	1332	1267	1252	1305	747
Average age	25.6	27.7	29.7	30.0	30.8	32.4
% Females	22.6	22.1	19.7	16.9	20.8	17.5
% Non-natives	1.9	1.9	3.6	7.9	12.8	15.5
Professional condition						
% Employed	33.5	40.6	57.7	60.4	53.7	44.3
% Student	0.8	1.3	2.1	4.2	6.6	8.8
% Unemployed	28.4	32.4	33.5	33.9	39.2	41.0
% Missing case	37.3	25.8	6.7	1.6	0.5	5.9
Educational degree						
% High school diploma	12.0	17.0	26.2	32.0	33.6	33.3
% University	1.5	1.2	2.2	2.9	4.9	6.4
% Missing case	33.3	19.4	2.9	0.7	1.0	8.0

For 70% of cases the primary substance of abuse was heroin, for 13% cocaine, for 12% cannabis, for l'1% benzodiazepines, for 1% MDMA, for 0.4% amphetamines, for 0.4% methadone. Relevantly lower shares are those of subjects with primary abuse

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of: buprenorphine, hallucinogens, morphine, crack, barniturates, inhalants, codeine, LSD, tramadol, viminol, hypnotics, ketamine and metamphetamines.

72% of heroin addicts assumed the substance by intravenous injection, 12% smoked it and 9% sniffed it. As to cocaine, 69% sniffed it, 14% smoked it and 6% injected it.

With time, the share of heroin addicts is relevantly decreasing, while that of subjects with primary abuse of cocaine and cannabis (many of whom entrusted to the services by order of the Prefecture) is increasing.

It must be noted that, over the latest period (years 2010/2013), 11% of accesses concerned the abuse of other substances than heroin, cocaine and cannabis. Furthermore, excluding benzodiazepines (1.5%) and amphetamines (0.8%), abuses of other substances with higher percentages than 0.5% do not emerge.

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Table 2: Period 1988-2013 Addiction treatment public centres in the Metropolitan area of Bologna, treated clients: primary substance abuse

	<1990	1990-94	1995-99	2000-04	2005-09	2010-13
% Heroin	97.3	91.6	77.9	58.5	60.5	45.2
% Cocaine	0.2	1.8	5.9	18.8	24.4	26.0
% Cannabis	1.7	4.7	12.8	17.4	12.2	17.0
% Other	0.8	1.7	3.2	5.2	2.6	10.8
% Missing case	0.0	0.2	0.2	0.1	0.3	0.9
Primary heroin use	503	1220	987	732	790	338
% Injected	88.7	93.4	85.8	57.3	40.1	33.7
% Smoked	0.2	0.2	1.0	8.6	40.8	49.1
% Sniffed	0.6	0.2	5.5	25.2	18.0	12.7
% Missing case	10.5	6.1	7.7	8.9	1.1	4.4
Primary cocaine use	1	24	75	235	318	194
% Injected	0.0	0.0	6.7	13.2	5.3	0.5
% Smoked	0.0	12.5	2.7	8.5	16.3	21.6
% Sniffed	100.0	20.8	41.3	68.1	76.2	74.2
% Missing case	0.0	66.7	49.3	10.2	2.2	3.6

Another aspect concerns the decrease in time of the share of new intravenous heroin addicts and the increase of the number of subjects who instead smoke it. The decrease of intravenous use concerns cocaine, too (0.5% in the period 2010/2013): also in this case the share of the subjects smoking it proves to be increasing.

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Discussion

From the analysis of the characteristics of SERT clients at the moment of their first access – with an increase of the average age, of non-natives, students and subjects with a medium-high educational qualification, apart from the historical core of intravenous drug users – the presence emerges of diverse groups of drug addicts: non-natives, new heroin addicts and cocaine abusers.

This study showed that during the year 2000 one user out of four assumed also cocaine, and the share of non-natives quadrupled. Another aspect concerns the decrease in time of the share of new intravenous heroin addicts and the increase of the number of subjects who instead smoke it. A distinct reasoning applies to cannabis, in whose case the access to services mostly occurs pursuant to an administrative order.

Furthermore, it must be noted that, over the last few years, a new user out of ten abuses other substances than heroin, cocaine and cannabis.

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4. Emergency Department accesses due to the abuse of illegal substances

Aims

This study explores and analyzes the characteristics of the subjects who turned to the Emergency Departments of the hospitals in the metropolitan area of Bologna after the use or abuse of illegal psychoactive substances over the period 2004/2013.

Methods

Case definition - Subjects resident in the metropolitan area of Bologna, aged between 15 and 64 years, who turned to an emergency unit for problems caused by the use/abuse of illegal substances, were selected. The data were provided by the IT system of Bologna Local Health Authority.

A retrospective case-study design was used. We searched the hospital patient database for all consultations related to cocaine use in 9 EDs between January 2004 and December 2013, in the Metropolitan Area of Bologna, in Northern Italy.

Records from each ED including pre-hospital care reports, nursing notes and physician records were verified using keywords from the International Classification of the Diseases (ICD-10). The analysis of records was carried out by a multidisciplinary team comprised of a neurologist, a cardiologist, a toxicologist, a gastroenterologist, a psychiatrist and a epidemiologist (Pavarin et al., 2011).

All information were obtained retrospectively and data collection forms were abstracted for each case.

Variables - All variables were extracted from the available information recorded in the electronic archives and upon admission to the ED: gender, age, nationality, residence, day, hour, month, TRIAGE code. The substances of abuse may have been more than one. It is worth mentioning that, on the grounds of the selection criteria, the substance of abuse could not be specified.

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Information on ED assessment outcome (i.e. hospital admission, discharge, self-discharge, drop-out) and regarding substance used (i.e. psychoactive or prescripted drugs) was obtained analysing the ED case file. For patients admitted to hospital, we collected data on the admitting ward and any discharge notes.

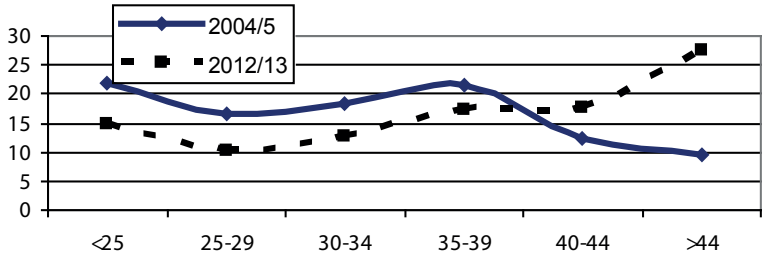
The cohort was cross-checked with the electronic data available for all subjects referring to the local state health system facilities dealing with providing care and treatment for people with addictions involving illegal drugs and alcohol, known by the acronym SERT, and to the Community Mental Health Service (MHS) in the metropolitan area of Bologna.

Statistical analyses - All analyses were performed using STATA 11.0 Standard descriptive statistics were used to analyse the distribution of suicide attempts. Continuous and categorical variables were analysed with Student's t and chi-squared tests, respectively.

Results

Over the period between January 1st 2004 and December 31st 2013, there were at least 3931 accesses due to the use or abuse of illegal substances, growing stunningly in time: 14% from 2004 to 2005, 16% from 2006 to 2007, 19% from 2008 to 2009, 21% from 2010 to 2011 and 30% from 2012 to 2013.

Graph 1: Access trend by age



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As to the socio-economic and age-related characteristics, the average age is 36 years, 22% are females, 18% non natives and 31% non residents. 44% accesses to services occur at night, 39% during the weekends, 3% pursuant to an administrative order. 54% are green codes, 25% yellow, 16% white and 4% red.

It must be noted that 4% of the subjects is less than 20 years' old and 7% is more than 50 years' old, but this datum is increasing (over the period 2004/5, by 3.2%, and over the period 2012/13 by 10% $P<0.0001$). As we can see in graph 1, with time the share of subjects older than 40 years increases. Such datum is confirmed by the average age at the moment of access, which proves to be increasing.

While the share of females has a fluctuating trend, those of non-natives and residents are increasing. The percentage of night and weekend accesses, instead, is diminishing; that means that such consumptions are no longer limited to "fun" occasions.

As to the seriousness of accesses, the number of those considered as more serious is stable, even if red codes are decreasing.

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Table 1: Period 1988-2013 Emergency Departments in the Metropolitan area of Bologna, accesses due to use/abuse of illegal psychoactive substances

	2004-5 (532)	2006-7 (639)	2008-9 (755)	2010-11 (811)	2012-13 (1194)	Total (3931)	P
Characteristics							
Average age	32.8	35.2	36.2	37.3	37.3	36.1	<0.0001
% Female	23.3	19.1	20.9	21.1	22.8	21.5	0.331
% non-natives	16.9	16.0	17.0	19.5	19.7	18.1	0.245
% Non-residents	38.9	36.5	32.6	24.5	28.0	31.0	<0.0001
Arrival							
% Night	44.9	46.0	43.0	42.2	42.9	43.6	0.624
% Week-end	42.3	40.8	39.1	35.0	39.4	39.1	0.065
% Pursuant to administrative order	2.8	4.5	3.3	2.8	3.0	3.3	0.362
Triage							
% Red	1.3	5.0	5.8	5.2	3.8	4.3	<0.0001
% Yellow	21.1	22.5	27.8	25.8	26.4	25.2	
% Green	48.3	53.4	53.4	54.0	58.3	54.3	
% White	29.3	19.1	11.8	15.0	11.6	16.0	
Previous contact							
% SERT	35.5	37.1	45.3	48.5	49.6	44.6	<0.0001
% MHS	13.0	14.2	18.7	26.4	27.1	21.3	<0.0001

Another aspect concerns previous contacts with the drug addiction (SERT) and mental health (MHS) services: at the moment of access 45% were already in contact with a SERT and 21% with a MHS – data increasing over the period considered.

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Table 2: Period 1988-2013 Emergency Departments in the Metropolitan area of Bologna, accesses due to use/abuse of illegal psychoactive substance

	2004-5 (532)	2006-7 (639)	2008-9 (755)	2010-11 (811)	2012-13 (1194)	Total (3931)	P
Substances: any							
% Opiate	62.0	62.4	61.5	60.9	54.1	59.3	0.001
% Cocaine	21.6	19.9	17.0	18.7	19.9	19.3	0.278
% Cannabinoids	10.7	11.4	8.2	10.0	15.8	11.8	<0.0001
% Amphetamines	2.6	0.9	1.1	1.4	1.2	1.3	0.086
% LSD	1.1	0.6	0.9	0.2	0.5	0.6	0.255
% Ketamine	0.4	1.1	0.5	0.6	0.4	0.6	0.4221
% Ecstasy	1.1	0.2	0.7	0.6	0.4	0.6	0.234
Substances: only							
% Opiate	54.1	56.0	57.7	56.0	48.6	53.8	<0.0001
% Cocaine	13.2	13.0	13.1	13.2	13.5	13.2	0.998
% Cannabinoids	7.7	9.9	7.2	7.9	12.6	9.5	<0.0001
% Amphetamines	1.5	0.8	0.8	1.0	0.8	0.9	0.616
% LSD	0.9	0.3	0.9	0.2	0.4	0.5	0.200
% Ketamine	0.4	0.9	0.4	0.4	0.2	0.4	0.185
% MDMA	0.6	0.2	0.7	0.2	0.2	0.3	0.275
Substances: more							
% Opiate/Alcohol	5.5	8.1	7.4	8.8	8.0	7.7	0.247
% Opiate/Prescription drugs	4.3	3.8	4.9	1.8	3.5	3.6	0.019
% Opiate/ Prescription drugs/Alcohol	0.2	1.3	1.1	0.6	0.7	0.8	0.233
% Opiate/Cocaine	7.0	6.1	3.3	4.3	4.5	4.8	0.018
% Opiate/Cocaine/Alcohol	0.2	1.4	0.1	0.6	0.8	0.6	0.026
% Cocaine/Prescription drugs	1.3	1.1	1.7	1.2	0.8	1.2	0.526

As to the single substances of abuse (whether assumed alone or in combination with others), in 59% of cases they are opioids,

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in 19% cocaine, in 12% cannabis and in 1% amphetamines. Below 1% there are LSD (0.6%), ketamine (0.6%) and MDMA (0.6%).

It must be noted that, with time, accesses due to the use of cannabis are increasing (11% from 2004 to 2005 and 16% from 2012 to 2013 P<0.0001) and opioids are decreasing (62% from 2004 to 2005 and 54% from 2012 to 2013 P 0.001).

Furthermore, a non statistically relevant decrease of cocaine (22% from 2004 to 2005 and 20% from 2012 to 2013 P 0.278) and of amphetamines (3% from 2004 to 2005 and 1% from 2012 to 2013 P 0.086) must be noted.

Among accesses, 54% had used only opioids, 13% only cocaine, 10% only cannabis, 8% opioids and alcohol, 5% opioids and cocaine, 4% opioids and medicines (prescription drugs) and 1% cocaine and prescription drugs (table 2).

Percentages lower than 1% are related to: amphetamines (0.9%); combination of opiate, prescription drugs and alcohol (0.8%); combination of opiate, cocaine and alcohol (0.6%); LSD (0.5%); ketamine (0.4%); MDMA (0.3%).

As to the trend, we must emphasize the decrease of accesses due to abuse of opioids alone (54% from 2004 to 2005 and 49% from 2012 to 2013 P<0.0001) and the increase of those due to the abuse of cannabinoids alone (8% from 2004 to 2005 and 13% from 2012 to 2013 P<0.0001). As to the combinations of substances, a decrease must be noted in the use of opiate and prescription drugs (4.3% from 2004 to 2005 and 3.5% from 2012 to 2013 P 0.019) and in that of opiate, cocaine and alcohol (7% from 2004 to 2005 and 5% from 2012 to 2013 P 0.018).

For the purposes of this research, what is particularly interesting is the (but slight) increase of accesses due to the combined use of opiate, cocaine and alcohol (0.2% from 2004 to 2005 and 0.8% from 2012 to 2013 P 0.026).

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Another evidence concerns the combinations of illegal substances with alcohol concern at least 19% of the examined cases, although with time a non-statistically relevant increase emerges (15% from 2004 to 2005 and 19% from 2012 to 2013 P 0.225).

Discussion

The study shows an icrease of the Emergency Department accesses due to the use or abuse of illegal substances: these are people aged between 30 and 40 years, the majority of whom are males, natives and residents, in many cases already assisted by SERTs or the mental health services (MHS).

In most of these cases the substances of abuse were opioids (59%), cocaine (19%) and cannabis (12%); lower percentages than 1% were related to the abuse of amphetamines, LSD, ketamine and MDMA. In one case out of five, illegal substances were combined with alcohol.

Over the period examined, an increase must be noted in the average age and a decrease in night and weekend accesses, which means that such consumptions are no longer merely aimed at "having fun". Furthermore, an increase has emerged in accesses due to the use of cannabis and a decrease in those due to the use of opioids.

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5. Non-lethal overdoses

Aims

The purpose of this study is to analyse the characteristics of the subjects who turned to an Emergency Department in the Metropolitan Area of Bologna following a non-lethal overdose of illegal substances.

Methods

Case definition - Subjects who turned to an Emergency Department for problems caused by an overdose of illegal substances were selected. The data were provided by the IT system of Bologna Local Health Authority. A retrospective case-study design was employed. We searched the hospital patient database for all consultations related to cocaine use in 9 EDs between January 2009 and December 2013, in the Metropolitan Area of Bologna, in Northern Italy.

Records from each ED, including pre-hospital care reports, nursing notes and physician records, were verified using key words from the International Classification of the Diseases (ICD-10). The analysis of records was carried out by a multidisciplinary team comprised of a neurologist, a cardiologist, a toxicologist, a gastroenterologist, a psychiatrist and an epidemiologist (Pavarin et al., 2011). The term "overdose" was specifically researched in each record.

All information was obtained retrospectively and data collection forms were abstracted for each case. For the present investigation, each person's first attendance during the study period was included as the index episode.

Variables - All variables came from the available information recorded in the electronic archives and at the ED admission: gender, age, nationality, residence, day, hour, month and TRI-

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AGE code. The substances of abuse may have been more than one. It is worth mentioning that, on the grounds of the selection criteria, the substance of abuse could not be specified.

Information on ED assessment outcome (i.e. hospital admission, discharge, self-discharge, drop-out) and regarding substance use (i.e. psychoactive or prescription drugs) was obtained analysing the ED case file. For patients admitted to hospital, we collected data on the admitting ward and any discharge notes.

The cohort was cross-checked with the electronic data available for all subjects referring to the local state health system facilities dealing with providing care and treatment for people with addictions involving illegal drugs and alcohol, identified by the acronym SERT, and to the Community Mental Health Service (MHS) in the metropolitan area of Bologna.

Statistical analyses - All analyses were performed using STATA 11.0 Standard; descriptive statistics were used to analyse the distribution of suicide attempts. Continuous and categorical variables were analysed with Student's t and chi-squared tests, respectively.

Results

Over the period between January 1st 2009 and December 31st 2014 there were 389 ED accesses due to overdoses of illegal substances: average age 36 years, 17% females, 20% non-natives, 52% non-residents (table 1).

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Table 1: ED accesses due to overdoses in the Metropolitan Area of Bologna from 2009 to 2013: arrival

		Males (322)	Females (67)	Total (389)	P
Demographic features	Average age	36.5	34.4	36.1	0.12
	% Non-natives	20.8	13.4	19.5	0.17
	% Non-residents	53.3	43.1	51.6	0.13
Arrival	% Night	39.4	37.3	39.1	0.75
	% Week end	38.2	52.2	40.6	0.03
	Ambulance	44.7	52.2	46.0	0.26
TRIAGE	% Red	21.4	19.4	21.1	0.01
	% Yellow	50.9	70.2	54.2	

In 39% of cases ED access occur at night, while in 41% of them they occur during the weekends, and in 46% in an ambulance. 22% of the subjects are older than 44 years, a male out of four is aged between 35 and 39, and a female out of four is younger than 25.

Friday (19%) is the weekday with the biggest turnout, Tuesday (10%) that with the lowest. Females' accesses (52%) are more numerous than males' (38% P 0.03) during the weekends.

As to the Triage code, most accesses are classified as "yellow code", mainly among females (females 70%, males 51% P 0.01), but it must be noted that one case out of five is classified as "red code".

In 28% of cases the subject was or had previously been in contact with a SERT; half of them, mainly among females (females 66%, males 46% P 0.003), had more than one ED access due to an overdose, over this period.

As to the outcome, 11% left the ED voluntarily, 10% refused any sort of treatment whatsoever and 6% was hospitalized within the next 24 hours.

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Overall, 20% refused the treatment or voluntarily left the ED, a behaviour that is more widespread among females (females 28%, males 18% P 0.05).

Table 2: ED accesses due to overdoses in the Metropolitan Area of Bologna 2009/2013: outcome

	Males (322)	Females (67)	Total (389)	P
Previous contact with services				
% SERT	27.0	29.9	27.5	0.64
% More than one ED access	46.0	65.7	49.4	0.003
Outcome				
% Refusing treatment/voluntary discharge	17.7	28.4	19.5	0.05
% Refusing any treatment whatsoever	8.7	13.4	9.5	0.23
% Voluntary discharge from the ward	10.6	14.9	11.3	0.31
% Hospital admission ≤ 24 hours	7.1	3.0	6.4	0.207

The substances emerged from the database analysis delated that in 88% of cases there was heroin, in 17% alcohol, in 9% cocaine, in 8% benzodiazepines, in 2% GHB (all females) and in 1% ketamine. In 6% of cases the substance was not indicated.

In 63% of cases only one substance was detected, whereas in 27% more substances had been combined (table 3).

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Table 3: ED accesses due to overdoses in the Metropolitan Area of Bologna 2009/2013: substances

	Males (322)	Females (67)	Total (389)	P
Substances: any				
% Heroin	89.4	83.6	88.4	0.17
% Alcohol	16.2	19.4	16.7	0.52
% Benzodiazepines	7.1	9.0	7.5	0.61
% Cocaine	9.3	4.5	8.5	0.20
% GHB	0.9	6.0	1.8	0.005
% Ketamine	0.9	3.0	1.3	0.18
% Not indicated	6.5	4.5	6.2	0.53
% Only heroin	62.7	61.2	62.5	0.03
% Heroin	89.4	83.6	88.4	0.17
Substances: more				
% Only heroin	62.7	61.2	62.5	0.03
% Heroin and alcohol	12.7	13.4	12.9	
% Heroin and benzodiazepines	5.3	1.5	4.6	
% Heroin and benzodiazepines and alcohol	1.2	6.0	2.1	
% Heroin and cocaine	5.3	1.5	4.6	
% Heroin and cocaine and alcohol	2.2	0	1.8	
% Only cocaine	1.2	1.5	1.3	
% Cocaine and benzodiazepines	0.6	1.5	0.8	
% Only ketamine	0.9	3.0	1.3	
% Only GHB	0.9	6.0	1.8	
% Only amphetamines	0.3	0	0.3	

In 63% of cases there was only heroin, in 13% heroin and alcohol, in 5% heroin and benzodiazepines, in 5% heroin and cocaine, in 2% heroin and benzodiazepines and alcohol, in 2% heroin and cocaine and alcohol, in 2% only GHB, in 1% only cocaine, in 1% only ketamine, in 1% cocaine and benzodiazepines, and in 0.3% only amphetamines.

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Among females the highest prevalence emerges of cases with use of heroin, benzodiazepines and alcohol, ketamine alone and GHB alone. Among males, differently, the prevalence concerns the use of heroin and benzodiazepines, heroin and cocaine, heroin, cocain and alcohol, in particular.

Discussion

Among the non-lethal overdoses recorded in EDs, there is a relevant group of people who are not residents in the reference territory: one out of five is a non-native.

In many cases these subjects were already in touch with a drug addiction service, and half of them had more than one episode of overdose, over the period considered. Another relevant aspect is the high amount of people who refuse the proposed treatment or leave the ED voluntarily.

In most cases the episode is associated with the use of heroin, alone or in combination with alcohol, benzodiazepines and cocaine. Cases are reported concerning the exclusive consumption of GHB, ketamine, amphetamines and cocaine.

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6. Fatal overdoses

Aims

The purpose of this study is to analyse the trend of overdose mortality in the territory of the Emilia Romagna region (wherever they reside) and among the residents of Emilia Romagna (independently from where they died).

Special attention will be paid to the time trend analysis, with reference to the area of death and the characteristics of the subjects deceased (age, gender, nationality and residence).

Methods

Case definition – From the website of the Emilia Romagna region, in relation to the years between 1997 and 2013, the deaths identified with codes ICD9 304 (Drug dependence) and E969 (Poisoning from psychotropic substances) were selected; furthermore, those with the codes ICD10 X42 (Accidental poisoning from exposure to narcotics and psychodysleptic drugs not classified elsewhere), F11 (Psychic disorders and behaviours due to the use of opioids), F14 (Psychic disorders and behaviours due to the use of cocaine), F19 (Psychic disorders and behaviours due to the use of multiple psychoactive substances and other psychoactive substances) were included.

Variables – The available variables were: year of the death, gender, age, place of birth, province of death and province of residence.

Statistical analyses – All analyses were performed using STATA 11.0. Standard descriptive statistics were used to analyse the distribution of deaths from overdose. Continuous and categorical variables were analysed with Student's t and chi-squared tests, respectively.

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Crude Mortality Rates (CMRs) per thousand person years and 95% confidence intervals were calculated by year, by province of death and by gender (population 15/64 years).

To evaluate the association between socio-demographic variables and general mortality risk, a regression analysis was performed adopting the Poisson method (Clayton & Hills, 1993; Selvin, 2003). The variables inserted into the model concerned gender, age (< 20 years, 20/29 years, 30/39 years, ≥40 years), period (>2000, ≤2000), residence (cities that are province seats with a population aged between 15 and 64 years <100.000; from 100.000 to 2000.000; >200.000).

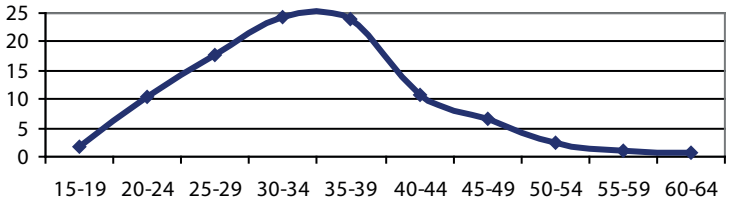
To calculate the person years, the population of residents in the region aged between 15 and 64 years, separately considered by year, province, gender and age-class[1], was included.

Results

6.1 Deaths in Emilia Romagna

During the period considered, in the area of Emilia Romagna overall 905 subjects died for overdose: mean age 34.1 years, 14% females, 10% non-natives, 24% non-residents in the province of death (8% resident in the region, 16% resident outside the region).

Graph 1: Age at the moment of death subdivided into classes: percentage comparisons



1. http://www.regione.Emilia Romagna.it (last visit 01/10/2014).

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The peak of deaths occurred in 1999, with 120 cases, then followed by a generally diminishing trend, until 2006, in which must be noted, in which there was an increase, as well as the period after 2010, when there was a slight increase.

While the percentage of females is diminishing, the average age and the share of non-natives and non-residents in the region are increasing (table 1).

As we can see in graph 1, the percentage distribution of the death age increases to 39 years, but then diminishes.

As far as the single provinces are concerned, 40% of deaths occurred in the territory of the province of Bologna, 14% in that of Modena, 9.1% in that of Ravenna, 9% in that of Parma, 8.7% in that of Reggio Emilia, 6% in that of Ferrara, 5.5% in that of Forlì Cesena, 5.2% in that of Piacenza, and 2.4% in that of Rimini. It must be noted that the share of deaths in the province of Bologna increased from 43% of the total amount in 1997 to 76% in 2013.

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Table 1: Deaths from overdose in the territory of Emilia Romagna

	Deaths	Average age	% Females	% Non-natives	% Non residents in Emilia Romagna
Total	905	34.1	14.3	10.3	16.2
1997	106	30.4	11.3	2.8	0
1998	93	32.7	9.7	5.4	0
1999	120	32.4	13.3	7.5	15.8
2000	109	32.5	11	10.1	21.1
2001	77	34.2	18.2	16.9	28.6
2002	49	34.3	36.7	6.1	14.3
2003	33	34.2	18.2	0	21.2
2004	41	33.8	14.6	19.5	19.5
2005	38	38.2	15.8	7.9	13.2
2006	53	35.5	5.7	18.9	28.3
2007	38	37.6	18.4	13.2	15.8
2008	36	36.2	19.4	25	33.3
2009	28	38.9	21.4	7.1	10.7
2010	13	38.5	15.4	0	30.8
2011	19	37.9	5.3	10.5	15.8
2012	23	39	8.7	17.4	17.4
2013	29	37.9	6.9	20.7	31

The minimum age, at the moment of death, is 16 years; the maximum is 63 years. From the available data it emerges that the average females' age at the moment of death is higher (average age 36.1 years) than males' (average age 33.8 years), and natives' age (average age 34.5 years) is higher than non-natives' (average age 30.7 years), and the age of the residents in the province of death (average age 35 years) is higher than that of residents in other regions (average age 30.9 years).

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Over the period considered, an increase must be noted in the average age of death, more evident for females (males' 1997 average age 30.5 years, 2013 average age 37.8 years; females' 1997 average age 29.9 years, 2013 average age 38.5 years).

6.2 Deaths of residents in Emilia Romagna

Over the period considered, among the residents in Emilia Romagna overall 804 subjects died, whose average age at the moment of death was 34.7 years; 15% were females, 7% were non-natives and 14% died outside the region.

The peak of deaths occurred in 1997, with 111 cases, but since 2001 the trend has been generally diminishing. The period from 2005 to 2006 must be noted, when there was a slight increase, as well as that after 2010, with a slight increase, too.

While the percentage of females and that of subjects deceased outside the region are diminishing, the average age and the share of non-natives are instead increasing (table 2).

As to the single provinces, 34% of deaths concerns residents in the province of Bologna, 13% residents in that of Modena, 11% in that of Parma, 10.9% in that of Reggio Emilia, 8.8% in that of Ravenna, 7.6% in that of Forlì Cesena, 7.2% in that of Ferrara, 5.7% in that of Piacenza and 1.7% in that of Rimini.

It must be noted that the share of deaths of subjects resident in the province of Bologna increases from 38% of the total amount in 1997 to 68% in 2013, and in that of Forlì Cesena from 7% in 1997 to 9% in 2013. The most relevant decreases, instead, concern Ravenna (5% in 1997, no case in 2013) and Ferrara (11% in 1997, no case in 2013).

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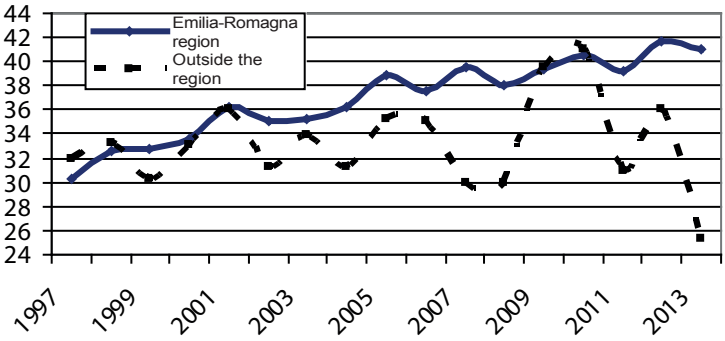
Table 2: Residents in Emilia Romagna deceased for overdose

	Total	Average age	% Females	% Non-natives	% Deceased outside the region
Total	804	34.7	15	7.1	14.2
1997	111	30.4	10.8	2.7	10.8
1998	97	32.7	10.3	5.2	15.5
1999	107	32.4	14	3.7	18.7
2000	90	33.5	13.3	5.6	17.8
2001	61	36.3	21.3	13.1	14.8
2002	43	34.8	39.5	4.7	7
2003	27	35.2	22.2	0	11.1
2004	35	35.1	8.6	20	22.9
2005	38	38.3	21.1	5.3	15.8
2006	39	37.3	7.7	10.3	7.7
2007	34	38.4	14.7	11.8	11.8
2008	25	37.4	20	16	8
2009	27	39.4	22.2	7.4	7.4
2010	12	40.8	16.7	0	33.3
2011	17	38.2	5.9	5.9	11.8
2012	19	41.4	10.5	10.5	5.3
2013	22	38.2	4.5	18.2	18.2

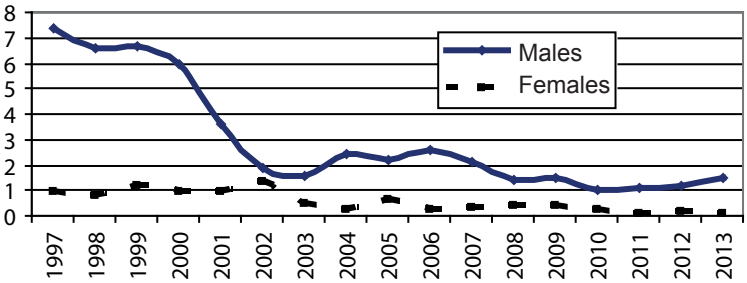
The subjects deceased outside the region (average age 32.7 years) are normally younger than those deceased in the region (average age 35 years); such difference becomes more evident in the reference period of our study, in which we observe an increase of death age, for what concerns deaths in the region, and a decrease for what concerns those outside the region (graph 2).

Graph 2: Average death age by area of death



Mortality rates – Over the entire period, the crude mortality rate (CMR) is 1.75 (CI 95% 1.63-1.87) every 100 thousand residents aged between 15 and 64 years, and is higher among males (CMRs 2.96, CI 95% 2.74-3.19) than among females (CMRs 0.53, CI 95% 0.44-0.63).

Graph 3: Emilia Romagna Region: Rates of mortality from overdose every 100 thousand residents aged between 15 and 64 years



The CMR proves to be decreasing for both males and females (year 1997 males 7.4 CI 95% 6.10-9.00, females 0.91 CI 95% 0.52-1.60; year 2013 males 1.5 CI 95% 0.97-2.30, females 0.07 CI 95% 0.01-0.50).

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Such trend is so much more evident if we look at graph 3, where for every year different CMRs for males and females are reported.

Such decrease concerns all provinces, excluding that of Bologna, where, starting from 2011, an increase can be noted (year 2010 CMRs 0.95, CI 95% 0.43-2.11; year 2013 CMRs 2.39, CI 95% 1.44-3.96). The data are reported in table 3.

Table 3: Residents in Emilia Romagna deceased for overdose: mortality rates for one hundred thousand residents aged between 15 and 64 years (males and females)

	Bo	**Fe**	**FC**	**Mo**	**Pr**	**Pc**	**Ra**	**RE**	**Rm**	**Tot**
1997	6.86	5.04	3.35	3.57	4.21	1.71	2.56	4.76	0.00	4.20
1998	5.07	0.85	1.68	4.51	4.21	3.45	4.28	4.38	1.14	3.70
1999	5.90	3.00	3.35	3.55	4.96	5.19	1.72	4.67	0.00	4.00
2000	2.62	4.33	3.35	3.77	5.70	4.62	4.75	2.97	0.00	3.50
2001	2.46	3.49	1.67	3.28	1.89	3.47	1.73	1.30	1.07	2.30
2002	2.31	0.44	1.25	1.40	1.89	2.32	2.59	0.97	0.53	1.60
2003	1.48	0.44	0.41	0.00	1.50	0.58	0.86	1.27	1.06	1.00
2004	2.13	2.20	0.82	0.46	0.74	1.14	0.85	2.50	0.00	1.30
2005	2.13	2.21	1.64	0.46	1.85	0.00	2.54	0.31	1.04	1.40
2006	2.95	0.44	1.63	0.00	1.84	0.57	2.94	0.30	1.03	1.40
2007	1.63	1.31	1.61	1.13	1.09	0.56	1.24	1.20	0.00	1.20
2008	1.28	0.00	2.39	0.00	2.86	0.55	0.00	0.59	0.00	0.89
2009	1.44	0.44	1.18	1.11	0.00	0.55	2.02	0.88	0.00	0.95
2010	0.95	0.00	0.39	0.88	0.00	1.08	0.00	1.16	0.46	0.63
2011	1.42	0.44	0.39	0.00	0.70	0.00	0.80	0.29	0.51	0.60
2012	1.89	0.00	0.00	0.00	0.00	0.54	0.80	1.15	0.00	0.67
2013	2.39	0.00	0.80	0.22	0.35	0.55	0.00	0.58	0.00	0.78

Bo Bologna, **Fe** Ferrara, **FC** Forlì Cesena, **Mo** Modena, **Pr** Parma, **Pc** Piacenza, **Ra** Ravenna, **RE** Reggio Emilia, **Rm** Rimini, **Tot** Emilia-Romagna region.

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Multivariate analysis – To evaluate the association between socio-demographic variables and general mortality risk, a regression analysis was performed using the Poisson method (Clayton & Hills, 1993; Selvin, 2003). The variables inserted into the model are gender, age (<20 years, 20/29 years, 30/39 years, ≥40 years), year (>2000, ≤2000), number of inhabitants (cities that are province seats, with a population aged between 15 and 64 years <100 thousand, from 100 thousand to 200 thousand, >200 thousand).

In the group of cities with up to 100 thousand inhabitants there are the provinces of Ferrara, Forlì Cesena, Piacenza and Rimini; in that with up to 200 thousand residents there are those of Modena, Parma and Ravenna; and in that with more than 200 thousand inhabitants there is only the province of Bologna.

Table 4: Incidence Rate Ratios for general mortality and 95% Confidence Limits for the variables inserted into the Poisson regression model

	RR	CI95%	P value
Sex			
Female	1		
Male	5.23	4.28-6.39	<0.0001
Age bracket			
<20 years	1		
20/29/years	2.45	1.89-3.16	<0.0001
30/39 years	2.05	1.58-2.65	<0.0001
≥40 years	0.42	0.31-0.57	<0.0001
Inhabitants			
<100000	1		
100000/200000	1.31	1.08-1.58	0.006
>200000	2.09	1.73-2.52	<0.0001
Year			
>2000	1		
≤2000	3.21	2.77-3.71	<0.0001

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The multivariate analysis emphasizes a higher risk for males, in the period before 2001, increasing to 39 years of age and in connection with the number of inhabitants at risk (aged 15-64) in the cities that are province seats (table 4). It must be noted that the risk decreases in a statistically relevant measure for subjects older than 39.

Discussion

1. Deaths from overdose in the regional territory – A relevant amount of deaths from overdose concerns subjects who are not resident in the region (one out of three in 2013) and non-natives (one out of five in 2013). These are average much younger subjects, who very probably find it objectively hard to be stably in touch with the drug dependance services. The trend diminished after year 2000, but an increase in the number of cases can be noted after 2011 in the province of Bologna.
2. For what concerns risk among residents, the mortality rate decreases for both males and females in all provinces except that of Bologna, where it increases starting from 2011. Multivariate analysis highlights a higher risk for males, before 2001, increasing up to the age of 29 and related to the number of inhabitants.

The datum concerning the relationship with the urbanization rate seems to be an important factor for the risk of death from overdose. On this specific point, in particular in relation to dangerous life-styles in densely populated urban areas and protective factors of small towns, further in-depth studies are necessary.

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7. Alcohol: a new drug?

Aims

The purpose of this analysis, based on data emerging from studies and surveys carried out in the Emilia Romagna region (ISTAT 2013, PASSI 2014, Pavarin-Consonni 2013, Pavarin-Biolcati 2014, Pavarin 2014, and Emergency Departments access), is an examination of the current trends in relation to the abuse of alcoholic drinks.

Results

The data – resulting from the ISTAT analyses and the PASSI study – in Emilia Romagna, as compared with the national data, reveal a higher prevalence of alcoholic consumption in general, of daily non-moderate consumption[2], binge drinking and strong habitual alcohol drinkers[3]. The riskiest alcohol consumption[4] is most frequent among young Italian males with a medium-high education level.

General population – From the interviews with a sample of residents in the Metropolitan Area of Bologna aged between 18 and 64 years[5], the prevalence emerges of a higher than 65% con-

2. Non-moderate daily consumption is the consumption exceeding 2-3 alcohol units per day for men, and 1-2 alcohol units for women; 1 unit for elderly people aged 65 years and more; any daily amount for minors aged between 11 and 17 years. Binge drinking: the consumption of 6 or more glasses of alcoholic drinks on a single occasion.

3. Strong alcohol habitual consumers: average daily consumption for men >2 alcoholic units, for women >1 alcoholic unit. Binge consumers: Number of alcoholic units on a single occasion for men ≥5, for women ≥4

4. Binge drinking, strong habitual consumers of alcohol, between-meals consumers.

5. http://www.ausl.bologna.it/oem/i-rapporti-sulle-diepdenze-in-area-metropolitana/rapporto-2012-sulle-dipendenze-in-area/rapporto 2012.pdf/view

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sumption of alcoholic drinks in all age classes, with an average monthly expenditure of 45 euros. It must be noted that 25% of the subjects report that they have drunk a lot over the last month, 17% tested positive at the binge drinking test, and 10% answers positively at least in three items of the CAGE test. Age and sex seem to influence alcohol abuse, suggesting the possibility of marked differences between males and females and between different generations in relation to particular life-styles.

Table 1: Year 2013 – Interviews with residents in the Metropolitan Area of Bologna, age comparisons

Dangerous drinking styles	**18/24 years**	**25/34 years**	**35/64 years**
Has drunk a lot over the last month	33.3	53.4	16.3
Binge drinking	29.6	31.0	12.1
Positive in three items of the CAGE test	7.4	17.2	7.9
Drunkorexia	7.4	3.4	0.0
Reasons for drinking			
Social relations	40.7	39.7	26.0
Entertainment	22.2	13.8	6.5
Pleasure	25.9	25.9	26.0
Taste	3.7	10.3	17.2
Relax	3.7	12.1	3.3

The multivariate analysis emphasizes the existence of a correlation between risky alcoholic behaviours, tobacco addiction and high involvement with illegal substances, which is more likely for young males. The presence must also be noted of a high

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amount of young underweight women with alcohol abuses, who can be defined as drunkorexic[6] (Chambers, 2008). Also for what concerns specific motivation, we observe important age-related differences. In fact, while the datum on drinking for one's pleasure is similar in the different groups, the consumption of alcoholic drinks associated with social relations and entertainment is typical of the youngest, the consumption due to the taste of alcoholic drinks is more diffused among older people and that for relax is such in the age bracket between 25 and 34 years (Table1).

Minors – From the study on minors aged between 13 and 16 years in the Metropolitan Area of Bologna, it emerges that the assumption of alcoholic drinks is associated with entertainment, social relations, curiosity and pleasure; a smaller share drinks alcohol because it is readily available or in order to emulate the others.

From the analysis of the relation between the motives for using the various legal and illegal psychoactive substances, it emerges that consumption for entertainment is more likely for those who consume alcoholic drinks, that for relax is such for those who use alcohol or tobacco, whereas that aimed at improving social skills is more likely for those who use alcohol or cannabis. Pleasure and curiosity, instead, seem to be in common between the three different substances (Table 2). Furthermore, the odds of a recent use are higher for males in relation to the availability of money and a weak perception of the dangerousness not only of alcohol, but also of tobacco and cannabis.

6. Drunkorexia, which means the consumption of alcoholic drinks without eating before, is a neologism not yet recognized by official medicine, deriving from the crasis of "drunk" and anorexia. It is a behaviour referred to the eating conduct, correlated to an exasperated alcohol-drinking habit diffused among very young people. The term is not included in the ICD-10 classification or in the DSM V diagnostic manual.

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Table 2: Early adolescents' motives for using substances – Random effect multiple logistic regression model – Odds ratio

	Tobacco	Alcohol	Cannabis
Entertainment	1.45	76.12*	1.76
Sociability	1.54	15.93*	2.0*
Curiosity	13.69*	1.99*	1.75*
Pleasure	8.08*	3.21*	2.55*
Emulation	15.85*	1.64	0.41
Relax	47.59*	3.35*	1.02
Self-treatment	18.59*	0.96	2.14

** statistically relevant by 95%*

From the preliminary results of a cross multicentre study carried out in four Italian regions (Pavarin, 2014) in which the majority of interviewed subjects is contiguous to alcohol (they drank alcoholic drinks at least once in their lives, were present in situations of use, or were offered them) and many drink only during the weekends, we always find higher prevalences in the second generation (subjects born in Italy from non-native parents). From the profiles of subjects with problematic consumption of alcoholic drinks youngsters emerge with a not very friendly relationship with their parents and who elude their control, search for unusual sensations and also use other psychoactive substances, mainly tobacco and cannabis. In particular, the distinction legal/illegal seems to be losing sense, since the choice of which psychoactive substance to consume derives from specific motivations.

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Table 3: Migrant generation and alcohol abuse

	Natives (1851)	Non natives (147)	Second generation (97)	P
Dangerous drinking styles*	6.8	8.2	10.3	0.349
Daily consumption>=5 cigarettes	6.2	8.1	11.4	0.004
Recent use of illegal substances	5.4	8.2	16.5	<0.0001
Alcohol alteration over the last year	13.5	20.4	23.7	0.02
Binge drinking	3.5	3.4	1.0	0.421
At least 2 positive answers in the CAGE test	2.9	4.8	4.1	0.359
Mix of alcohol and illegal substances	2.7	2.0	7.2	0.028
Alcohol and driving	0.8	2.7	0.0	0.029

* Two positive answers in the CAGE test, or assumes mixes of alcohol and drugs, or consumes alcoholic drinks and then drives, or binge drinking

From the analysis of the meanings attributed to the different substances both cross elements (curiosity, pleasure, social relations) and parallel paths of experimentation (emulation, entertainment, relax) emerge. Moreover, the results of the study document the growing consumption of psychoactive substances among minors and the relative cultural adaptation in this specific age bracket. Within this population we can distinguish the second generation youths, who make the analytical frame more complex, emphasizing, apart from consumption models based on individual choices, also structural factors that can be connected with different social ranks. These are new and not well known aspects of the constantly evolving Italian multicultural society, to be examined more in depth with further researches.

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Emergency Department – From accesses to hospital EDs in the ASL ("Local Health Unit") of Bologna (Metropolitan Area) over the period from 2006 to 2013, using keywords deriving from the ICD10 (Pavarin et al., 2011), over ten thousand accesses due to alcohol-related problems were selected: 67% for alcohol abuse without dependence, 30% for addiction to alcohol. Half of the accesses occur at night or during weekends: average age 44 years, 22% females, one out of three non-native or non-resident, 10% accidental falls, 6% road accidents, 4% violent acts, 3% self-harms or attempted suicides. The profile of the subjects with alcohol abuse without dependence (the most numerous group) highlights males younger than 30 years, whose access occurs at night during weekends, with concurrent abuse of medicines or illegal substances. It must be noted that road accidents seem to be associated with all different personal characteristics (age, gender, residence, nationality).

Table 4: Emergency Department accesses due to alcohol abuse

	Total (10821)		**Total (10821)**
% Female	22.24	% Prescription drugs	2.92
% Not native	34.43	% Illegal substances	2.58
Average age	44.10	% Opiates	0.43
% <20 years	5.39	% Cannabinoids	0.67
% 21–30	13.69	% MDMA	0.06
% 31–40	22.40	% Cocaine	0.68
% 41-50	26.33	% Hallucinogens	0.03
% ≥50	30.07	% Ketamine	0.03

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Women and alcohol – From a research carried on on a target of women alone (30/50 years), interviewed in some commercial centres of Bologna and Lucca, the consumption of alcoholic drinks emerges as a prominently weekend-related, in many cases solitary and between-meals phenomenon. Such use is considered as normal, to ease socialization and for one's pleasure, while those who quit drinking did so in order to improve their health conditions or following a pregnancy. Among drinkers, at least one interviewed woman out of five has risky drinking-related behaviours, and these are more likely for those who do not have particular responsibilities (unmarried, with no children), with a strong relationship with their dissatisfaction with their life quality and increasing in connection with the education level. Plus, an association emerges with the use of cannabis and tobacco smoking, also when consumption is not intense. These data are partly confirmed by recent studies, which report that among women occasional and non-daily – also between-meals – consumption is increasing, and is higher for people with a high education level and in connection with tobacco smoking (Scafato et al., 2012).

Discussion

Consumption is decreasing, also as a result of the economic crisis, but dangerous drinking styles are increasing. From such picture the complexity emerges of alcohol-related problems, which do not seem to concern only the youths. Furthermore, special attention must be paid to women (young and not so young) and to second generation immigrants.

From the ISTAT and PASSI study analyses a peculiarity of the Emilia Romagna region emerges, where, in comparison with the national data, we observe a higher consumption of alcoholic drinks and a more marked prevalence of risky behaviours, in particular in the age bracket between 18 and 24 years.

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From the study on the residents in the Metropolitan Area of Bologna, an age-based differentiation emerges: the use of alcohol on social occasions or for entertainment seems to exclusively concern the youths, while that for nutrition concerns the adults.

The studies conducted on minors, where a strong relationship emerges between the use of alcohol, tobacco and cannabis, supported by similar motivations, emphasize a high abuse of alcoholic drinks: a youngster out of three feels very involved with alcohol, one out of four got drunk at least once over the last year, and one out of ten has risky alcohol-related behaviours. The most exposed youths elude their parents' control and search for new and exciting experiences.

Two thirds of ED accesses for alcohol-related problems concern the abuse of alcoholic drinks without dependence: males, Italians younger than 30 years, who also consume illegal substances or medicines, at night during weekends.

Conclusions

The tendency, diffused among the youngest, to consider alcohol as a real psychoactive substance must be observed very carefully, mainly in relation to potential prevention policies. In fact, young people's modes of drinking are becoming different from those of adults. Such change in progress must be examined in the context of the ongoing more general changes in alcoholic consumption and social transformations.

For most youths alcohol is a key component of the time spent out of home and school, and its key-role in entertainment makes it their favourite drug. Youngsters decide whether, what and how much to drink, also based on a cost-benefit calculation that is part of their broad risk assessment in relation to the range of substances they have access to (Parker et al., 1998). Moreover, a choice emerges also in relation to many other factors, among

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which the desired effects, the prices, the accessibility and the more or less ready availability. Most of them learn to drink through their friends, within a context of social relations, much before reaching the age at which they can go to bars. Furthermore, social relations appear as a crucial element in the tendency to associate alcohol and drugs, with a relax and disinhibition effect that makes social contacts easier (Fabrizio et al., 2013).

More in general, this is a process concerning many food commodities: in this context, alcohol traditional cultural references are becoming weaker, with the consequent weakening of the controls of the informal networks that guaranteed the intergenerational transmission of compatible and reliable drinking models. The current orientation, mainly among young generations, in fact, seems to go beyond the dichotomy legal/illegal, and alcoholic drinks are consumed as an alternative to or concurrently with other psychoactive substances, but with similar motives, with the risk that alcohol may be considered as a real "drug" in all senses.

On top of this, from the studies carried out on the young population, more complex situations emerge, in which the second generation of migrants (immigrants' children) seems to run higher risks (Hamilton et al., 2009), largely due to their particular social position, which means to their socio-cultural background and socio-economic conditions.

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Qualitative studies

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8. Drug market and economic crisis: a qualitative study with consumers and experienced professionals

Aims

The aim of this study was to investigate the consequences of the economic crisis on the state of relationships and time management as well as in the consumption of illegal drugs and in the role played by alcohol consumption. It is based on in-depth interviews with 1) a select sample of experienced professionals in the field of drug addiction (doctors, psychologists, educators, social workers, harm-reduction and counsellors), law enforcement officers and self-organized consumers of illegal substances; 2) a select sample of consumers with different levels of involvement with illicit drugs, .

The group of experienced professionals identified the following issues to be explored: 1) the economic crisis and its consequences, i.e the changes produced in social life, in work, in the availability of money, habits, leisure, 2) purchasing strategies, price, accessibility, quality and market of illegal drugs, and 3) function performed by alcohol.

8.1 The experts

Methods

Eight sector experts were interviewed: two SERT doctors, a psychologist, two social educators, a harm reduction operator, a policeman (captain of the flying squad) and a member of a self-protection group of consumers of illegal substances.

Results

According to the two SERT doctors, unemployed people are those who mostly turn to the services; these are subjects with

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lesser economic possibilities and more free time. In fact, not by chance many of them turn to a SERT to ask for economic assistance or work bursaries, rather than for problems related to substances. In the end, therefore, work bursaries take on the meaning of a dole.

As to the datum concerning the higher rate of aggressive behaviours and thefts, an explanation could be the crisis situation of the country, because of which it is more and more difficult to reintegrate the "recovered" users into a job. This generates a lot of frustration in them, which results in the cases of violences between drug addicts aimed at stealing methadone.

As far as market conditions are concerned, there is an increased use of less expensive substances such as alcohol and benzodiazepines, also because dealing or using cannabinoids is no longer considered worthwhile because of the legal problems it may cause.

The prices of hashish and marijuana are increasing, very probably as a consequence of the expanding market, in which further profit margins seem to be possible. The drug traffic, though, is still controlled by non-EU foreigners, because "*it is a job for poor devils that does no longer bear relevant fruits*". A high evidence is represented by the ever broader market of low-cost psychopharmacological drugs, although this is nothing new.

The psychologist says that consumers aim at saving money: "*minimum expense and maximum profit*". Drug traffic is considered as a real working resource, and dealers encourage youngsters to consume heroin, which has a low cost and stronger effects than hashish; for those who use both substances, the perception of risk differences is lower. Alcohol is considered as a resource for consumers, because it can be easily found and does not cost much.

According to a professional educator, the consumption of substances has increased "*as a dysfunctional response to the crisis and its consequences on people's private life*".

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Prices decrease because the market adapts to the crisis and the context, and many drug addicts, due to their insufficient economic resources and the lack of work, end up eating in "Caritas" soup kitchens, in order to save the money they need to buy the substances. Somebody remarks that "*the lack of the minimum living conditions causes many more people to turn to the SERT*", where the number users who use or abuse alcoholic drinks has relevantly increased.

To many, trafficking or being couriers of substances of behalf of third parties become real strategies to obtain both the substances and an income. A stunning increase must be noted in the inappropriate use of benzodiazepines and psychopharmacological drugs.

According to the declarations of the other professional educator, there are two fundamental problems: the crisis and the new regulations concerning the use of substances on the workplace. These two different aspects caused many consumers to lose their jobs, resulting in their frustration and depression, so that they went back to their illegal social contacts: "*it is humiliating to return to the SERT because of the crisis, for people who had completed their recovery path*".

The scarce welfare resources and the ever thinner work opportunities result in a racist perception of migrants, who are accused of being unfair competitors on the job market.

The other possible alternative is drug traffic, which makes it possible to have both the substance to use and the minimum income for surviving. Alcohol is one of the possible solutions: easy to buy, legal and apparently without risks.

According to SERT users, job placement bursaries are no longer considered as an adequate instrument to face daily necessities. It is too tiny an economic help, if we consider that, before the crisis, specialized workers performed the same job for at least a three times as high salary.

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The harm-reduction operator says that the use of some substances has diminished, except for those who manifest the most compulsive behaviours.

The crisis emerges in more specific phenomena such as small traffic, and in the massive return to alcohol, always purchased in discount markets.

Also the consumption of psychopharmaceutical drugs is increasing, both because of their low cost as compared with illegal substances and because these products are not perceived as real drugs.

The policeman who is the captain of the mobile squad says that, in general terms, he does not note a relevant change in the market, because the crisis is still too recent. In Bologna and its province the market is mainly stable, and a decrease emerges in cocaine consumption, in comparison with the boom of the past years; that of heroin, instead, remains more or less stable.

Prices have not changed relevantly, anyway they depend on the entire substance-related procedure (transport modes, concealing, supplier-consumer relation). As far as prices are concerned, the trust relationship between the consumer and the dealer is particularly important.

Another substance that is very much present on the market is ketamine, whose price dropped, probably as a consequence of a higher consumption.

These data are also confirmed by the decrease in the requisition rate of substances, as compared with the previous years. Anyway, street dealers' arrests have increased, although not so relevantly. This has nothing to do with the bigger dealers, that is, South American families: in fact "*the crisis does not concern the big drug exporters and does not change the market of South American families exporting large amounts of cocaine to Europe*".

As to the future scenarios, he says that the crisis might result in a decrease of demand, because of the lack of economic

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possibilities, and prices might decrease because of the impossibility to sell the substances that before were produced in large quantities, so resulting in a flood of substances on the Western market.

As to the function of the various substances, heroin seems to be more in line with the image of a withdrawn and problematic society, whereas cocaine combines better with a consumerist society.

According to the member of consumers' self-protection groups, the substances, in order to be more affordable, are sold in small doses, by the lower quality and price. For example, cocaine is also sold in 10 euro worth bags. Now cocaine is sold more than cannabis, because for the same price the seller handles a lower quantity of substance, thus easier to sell.

Dealers adapt to the new law rules, therefore, being the penalty for cannabinoids and cocaine traffic identical, it is more worthwhile for them to sell the same amount of cocaine with an up to forty times as big a profit. The risk that they run is the same, but the profit is much higher. As a consequence, the price of "*light*" substances increases and that of "*heavy*" substances diminishes.

When the economic possibilities are scarce, there are alternative ways to find the substances, that is trafficking them and reducing their quantity. The typical consumers buy the substances from people they know and trust, in order to receive a favourable treatment, but try also to save on other expenses.

Another method is that of creating "buying groups" in order to purchase larger quantities at lower prices. Such organizations are formed for convenience, thus also with previously unknown people. This offers the possibility of reselling at market prices (or even to "*cut*" with other, less expensive products) and then earning more money than the amount invested.

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Many dealers go abroad to purchase the substances, bring them to Italy and resell them, speculating on the price differences.

8.2 Consumers

Methods

A theoretical sample of regular consumers was selected with recent use of substances lasted at least one year, who had varying levels of involvement with illegal drugs. Over 2012 respondents were recruited on a voluntary basis from new patients at the public treatment services for addictions (SERT) ASL in Bologna and in gathering places where it was believed that the phenomena under investigation was probable. Recruitment was completed when the primary aspects became clear.

Two different instruments were used for the research (a structured questionnaire and an in-depth interview). In fact, while some consumption styles are measurable with the use of specific indicators and are connected with a particular relationship with the various substances, the specific consumption choices are strictly personal and are detectable only with the use of qualitative instruments (Pavarin, 2013C).

The researchers handed out a questionnaire to all participants, a part of which had already been used in previous works (Pavarin et al., 2013B), and later interviewed them in private. Interviews were tape-recorded with the interviewees' consent, and subsequently transcribed. A synthesis of analytic induction and grounded theory (Glaser & Strauss, 1967) was used to guide the analysis of the qualitative data.

The questionnaire collected demographic data (gender, age, birth country, living situation, education level and employment status), monthly disposable income, relation with illegal substances (substances used, lifetime use, age of first and last use,

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and mode of use), how they are obtained, number of episodes of consumption, average cost per gram, average monthly expenditure, contexts of use, reasons for use, and medical/treatment services due to the use of substances.

To measure consumption the Drug Abuse Screening Test (DAST 10) (Skinner, 1982) was employed, and dependence was measured with the Severity of Dependence Scale (SDS) (Gossop et al., 1995).

With regard to alcohol, the CAGE test was carried out (Bernadt et al., 1982) and the number of episodes over the last year and over the last 30 days (Valencia-Martín et al., 2008) was reported, as well as the average monthly expenditure and the type of alcohol used.

According to the SDS test, respondents were classified as addicted (score ≥4) (heroin, cocaine but not heroin, other drugs except heroin and cocaine) or not addicted (score <4).

Using the DAST 10, subjects who were not positive at the SDS test were classified as having low-level involvement (≤2 positive answers) or medium/high involvement with illegal substances (from 3 to 7 positive answers).

Results

We interviewed 79 subjects aged between 18 and 44 years: 19 were new patients at the ASL SERT Bologna, while the remaining 60 were enrolled on a voluntary basis at various gathering places.

The average age was 29, 35% were females, 4% were non-Italian, average available finances were 900 euro per month. Just over one-third (38%) were college graduates, 58% were employed, 37% were students, and 66% lived with other people.

Using the SDS test, fifteen subjects tested positive for heroin addiction (seven of them also were addicted to cocaine, and two

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also to cannabis), six were addicted to cocaine but not to heroin, ten tested positive for substances other than heroin and cocaine (three of whom were addicted to MDMA, and seven to cannabis).

Phenomenology of drug use - Respondents were divided into five categories: 1) addicted to heroin (19%), 2) addicted to cocaine, but not to heroin (8%), 3) addicted to other drugs, but neither heroin nor cocaine (13%), 4) not addicted, with medium-high involvement (39%), 5) not addicted, with low involvement (22%).

Individuals addicted to cannabis or MDMA first used illegal substances and alcohol and tobacco at a younger age.

Regarding the duration of use of illegal substance, subjects with medium/high involvement were those who reported the longest consumption.

Average monthly expenditure was higher among those with cocaine and heroin addiction and lower with lower levels of involvement. It should be noted that the percentage of income used to purchase substances increased in connection with the level of involvement and addiction. More than three-quarters (80%) of heroin-addicted patients, 33% of cocaine-addicted and 20% of those addicted to other drugs spent more than 50% of their disposable income.

The average monthly income of subjects addicted to cocaine was higher and a higher proportion of them tested positive at the CAGE test, with recent episodes of binge drinking. Heroin-addicts, it should be noted, were also those with the lowest income and the most likely to be addicted to tobacco.

Regarding the average number of episodes in the previous year of consumption, where intensity was at its top among heroin users, all subjects consumed cannabis at least once every three days; heroin was used almost daily by heroin addicts; cocaine was used at least once a week by those who were addicted to cocaine or to

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heroin, and sporadically by others; MDMA was used occasionally, ketamine and speed were used on weekends by consumers with medium/high involvement.

Regarding prices, cocaine cost an average of 77 euros per gram and was sold for less to people with heroin or cocaine addiction; heroin cost 28 euros, marijuana cost 11 euros, and hashish 10 euros.

With regard to buying habits, heroin and cocaine addicts were more likely to seek out specific environments and sellers, whereas random purchasing was more common among those addicted to other drugs.

Crises and consequences - With regard to the management of free time, people spent more time at home than outside, because being out meant spending money that they did not have. To many people having more free time also meant using drugs more frequently.

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Table 1: If the crisis has produced some consequences, how can you afford the substances?

No more individual, but collective/group purchase	42%
I reduce consumption	30%
I give up something else	23%
I use trustworthy channels/customer loyalty	19%
I get somebody offer me the substances	15%
I buy them only when I afford them	14%
I turned to the SERT as my last chance	13%
No change	13%
Drug dealing	11%
I buy less paying more, but getting higher quality substances	10%
I act as a mediator in order to consume drugs for free	9%
I consume less expensive substances	9%
I buy wholesale	8%
I get into debt (buy on credit; ask for loans)	6%
Self-production	1%

There have been no substantial changes in the lives of many consumers, because many claim to have been "in crisis" for a long time, and that it was very difficult to find a steady job over the previous years. They had the common concern of a future they could not even imagine. However, everyone had less disposable income, had lost their jobs or had to work harder for lower wages; they had to keep their expenses under control, and eliminate those that were considered unnecessary. Many stated that they must "*tighten their belts*"; some returned to their parents' house.

While the perception of time has changed and only short-term plans are made, substances are used less, but consumption does not cease; there still is a percentage of people who do not use them, if they cannot afford them.

These elements, with varying nuances, seem to be common to different types of consumption, except for cocaine addicts, who do not seem to be affected by the economic crisis.

Buying strategies – One of the main aspects to be further considered is that of the changing purchasing strategies of illegal substances with more limited financial resources. While more or less everyone said they bought less but consumed the same amount, there are new modes of collective buying, where people come together to reduce the final cost ("*Buy together and share the cost*"), although for some this may be a possible source of income ("*I join others in purchasing, so I gain*").

In fact, there are those who take on an entrepreneurial attitude ("*By simply organizing, maybe I can also earn something*") while others deal ("*Many kids have come to realize that it is a fast and easy way to get money and to pay for their own habits* ") or act as intermediaries ("*I buy with other peoples' money and I gain*").

The entrepreneurial business aspect of this market seems to adapt to that of other basic commodities, such as food, which can be bought on credit. Buying wholesale ("*Purchase large quantities in order to save money*"), they looked for the best prices from trusted sellers ("*I pay the same, but quality is guaranteed.*") In some cases there was a tendency to focus on cheaper products, but with differences with respect to varying degrees of involvement: ketamine or MDMA for heroin dependents and an increased use of alcohol among those with low involvement with substances.

Many people tried to save money by spending less on other products and giving up luxuries *("I do not go out to dinner," "I*

spend less at the bar and put aside for weekend drug use") and necessities ("*I won't eat*").

While everyone looked for quality ("*I consume less to afford high quality", "I spend more for better quality*"), many asked for a loan or sold personal items ("*I sold my computer and camera*"), especially among people with heroin addiction, many of whom turned to the SERT because they "*had no money for drugs*." It should be noted that especially among non-addicts, there are those who try to sponge off others as their main strategy of consumption.

Another issue is that of self-production, especially of marijuana, common among those who do not have addiction problems, in part also to make a profit.

Price, quality and quantity - All substances appeared to be more accessible, drug dealing has increased and individual sellers offered the entire range of products available, many sold on credit, and in many cases they sold pre-packaged products. It seemed much easier to find heroin; everyone sold cocaine, which could be found anywhere, especially in smaller doses, in order to keep retail prices low.

Table 2: Have you noticed a change in prices, concerning quality/quantity?

The quality of substances worsened	29%
A general increase of prices	23%
The quantity of substance sold for the same price is lower	20%
The quality-price ratio has decreased	19%
An increase in the price of quality substances	15%
Price reduction connected with a quality decrease	10%

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Regarding price and quality, characteristics often affected by fraud, the general impression was that the quality-price ratio is decreasing. In fact, even though the quality was lower because the substances were being increasingly cut, those who wanted better products had to pay a higher price ("good things cost"). Stable or lower prices meant smaller amounts of lower quality substances. In some cases, the sale of smaller quantities was a strategy of greater gain (*"two hundred half a gram doses are a more profitable way to sell 100 grams"*) for small dealers.

All respondents agreed on the fact that the quality of available marijuana has improved and the prices have increased significantly; this is a result both of the growing demand and of the current drug legislation, which does not distinguish between different substances.

As to cocaine, the price was lower ("*soon they'll be giving it away*"), but of a low quality and cut with several other substances ("*who wants good cocaine pays for it, otherwise there are street dealers*").

Another aspect concerns the perceived availability of heroin and cocaine, substances that now are more accessible, sometimes also on credit, although they are of a low quality.

Table 3: Do you notice a change in the availability of heroin and cocaine?

Wider availability	37%
More evident inclination to sell low-quality products	35%
More evident inclination to retailing	22%
Products are prepackaged	5%
Wider availability to sell on credit	4%

Role played by alcohol - The response to "*Is alcohol subsidiary to other substances in the absence of disposable income*?" was different according to the type of consumption, where those who had a low level of involvement recognized its effects more clearly and distinguished them sharply from those of other substances.

For those addicted to cocaine, alcohol was always subsidiary to other substances, and this is true even for those addicted to heroin, but for reasons related more to its low cost than to its effects.

For those addicted to other drugs (cannabis, MDMA) alcohol is a "*side dish*", while those who were not addicted, but are still heavily involved, believed that it is a great substitute.

Various consumption styles seem to delineate specific alcohol buying patterns, where heroin addicts shopped where it cost less and cocaine addicts spared no expense, and drastic savings strategies emerged across the board *("I'll bring the big bottle from home"; "I drink before going out to drink less out*"), which reflect the changing drinking styles of young people.

Another aspect that emerged, although our sample was made up of subjects with limited financial resources, is the "social" use ("*I'll buy it at the bar/club, I prefer to go out*") of alcohol, as evidenced by the decision to buy quality products in fashionable clubs.

Discussion

This study, despite the many limitations it presents – having researched similar targets, requiring further study and suggesting caution in generalizing the results – provides useful insights in order to understand some trends in the use of illegal substances that may develop over the coming years.

From the two groups of interviewed subjects (privileged witnesses and consumers) some interesting aspects emerge, partly connected with the market and partly with consumers' strategies.

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More and more unemployed people turn to drug addiction services, and drug dealing and the correlated activities are considered as economic resources replacing legal activities.

While a broad underground market of low-cost medicines is emerging, the inappropriate use of benzodiazepines, psychopharmaceutical drugs and alcohol is increasing. Another substance available is ketamine, whose price has relevantly diminished as a consequence of the increased number of consumers.

In general, prices are decreasing because the market is adapting to the crisis: small doses with low quality and prices. It must be noted that "traditional" substances such as heroin and cocaine are more available (low prices) and accessible (broader trafficking network), but with a lower quality level. The quality-price ratio is decreasing for all substances.

Another aspect emerging is the tendency to purchase collectively (and no longer individually), and to self-production, especially of marijuana.

In general, the tendency emerges to reduce consumption, mainly as a consequence of the economic crisis, but in relation with a search for better quality products, even if this means that prices are higher. As with legal merchandise, and as it has been noted in behaviours studied in other commodity fields, quality is sought after by using trusted sellers, and by buying from wholesalers, in a manner that partly reflects the experience of fair trade buyers.

This can affect the health of consumers: in fact, in a recent Dutch study it was shown that there is a very strong negative correlation between the price of cocaine and hospital admissions (Brunt et al., 2010), although the decision is often to not purchase, when the quality is perceived as poor (Cole et al., 2008).

Although street dealing has increased, and in our case we found people selling all kinds of products without distinction,

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it seems that only the casual consumer, who is the more unwary, purchases from this type of dealers. A kind of loyalty develops between vendor and customer, on the one hand to assure quality, on the other to assure that the drugs will sooner or later be paid for, because borrowing seems more and more frequent.

One substance is just as good as another: this is a belief only of those who have serious problems of addiction, such as alcohol for heroin users in methadone treatment for cocaine, or to amplify the effects of cocaine and reduce the intake. For others, diversity is substantial (for effects) and contextual, i.e associated with different types of sociability. For example, while those with heroin addiction buy alcohol at discount stores, those who are not dependent, but have financial difficulties, usually buy alcohol at places where it costs more, because this behaviour is related to trends, social activities and spending time with others.

Another interesting aspect that emerges concerns the relationship with time, where the following equation seems to be in play: more free time equals to more use of drugs. This has also been found in other studies, supporting the thesis that a weakening economy has an increased consumption of cannabis and other drugs among teenagers as a possible consequence (Arkes, 2007). Young people, in fact, have more time to use drugs and seem to be more motivated to consume them as a way to self-medicate the mental stress of financial difficulties.

As far as costs are concerned, where prices of heroin, cocaine and ketamine are falling, irrational market trends have emerged, and external factors (Italian legislation on drugs) seem to influence the rise in the price of cannabinoids. In fact, if a dealer is caught and arrested, the sentence is based on the percentage of the active ingredient and not on the type of substance.

It also emerges that the use of substances is gradually losing its sub-cultural matrix and consumption is becoming independent

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from places, contexts and cultural references. Therefore, the results of this study reflect the changes occurred over the last few years, which emphasize the key-role of the market in orienting choices and strategies.

The consumer of illegal substances acts as a normal consumer of whichever sort of consumables, but has lesser product guarantees and protections and, as a consequence, is often exposed to bigger health-related risks.

The quality check of the substances has relevant implications in terms of public health, mainly concerning the target of socially integrated consumers. These are subjects who hardly turn to drug addiction services, and whose problems only emerge following ED accesses to health structures due to traumatic events (road accidents), relevant health problems (cardiovascular disorders) and overdoses (Pavarin et al., 2011; Pavarin, 2014; Pavarin et al., 2014).

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9. The viewpoint of consumers: perceived disorders and harm reduction self-practices

Aims

The target of this study is a quota sample of people who habitually use substances and have never turned to drug addiction services.

Apart from describing the phenomenology of purchase and consumption in all their various aspects, the main purposes of the study, oriented to focused prevention initiatives, are: 1) highlighting specific consumers' health problems (and not only); 2) identifying possible strategies and harm reduction self-practices.

Methods

Over 2013, 100 residents in Emilia Romagna were selected who had never turned to a SERT, aged between 18 and 64 years, with a recent use of whichever illegal substance (for not less than a year), with an at least weekly consumption. By "weekly consumption" we also mean the alternate or overlapped use of more substances. The subjects who used only cannabis were excluded[7].

After the first contact, the purpose of the interview was illustrated by e-mail, and only later did the vis-à-vis contact come. Anonymity was guaranteed to everyone, such as the destruction of the recorded track, and everybody was individually interviewed: thirty-nine in their own house, thirty-four outdoors, fourteen in public places, six in school, six on the workplace, and one in a car. Four subjects who, a few days after being interviewed – because they were worried about their audio record-

7. Based on the estimated prevalence of consumption of illegal substances among the population of north-eastern Italy [Dipartimento Politiche Antidroga, 2012], among residents of the Emilia Romagna region a quota sample was selected of 100 habitual consumers, structured by gender (males and females), birth country (natives and non-natives) and age class (18-24, 25-34, 35-64).

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ing – thought twice and asked to be excluded, were replaced by others who had the same characteristics.

For the purposes of the research, two different instruments were employed: a semi-structured questionnaire and an in-depth interview. Researchers first handed out the questionnaire and then did the interview. The interviews, with the express consent of the interviewed subjects, were recorded and then transcribed into text files.

The questionnaire, specifically created for this type of work, collects socio-demographic data (gender, age, nationality, housing situation, education level and professional condition), the monthly amount of money available, the risk perception, the relation with illegal substances, alcohol abuse (Bernadt et al., 1982; Valencia-Martín et al., 2008), social networking and support (Tonsing et al., 2012), social and recreational activities (Bogner et al., 2001), positive identity (Wongpakaran, 2012) and antisocial conducts (Howard et al., 2010).

For every substance used at least once in a lifetime, information was requested as to the consumption trajectory and the recourse to services or specialists. As to the substances used during the last year, information was requested concerning: age of first and last use, modes of use, frequency, doses, average cost, contexts of use, motives for use, risk perception (from 1= *low* to 5= *high*), and correlated problems. In order to measure the involvement with consumption, the Drug Abuse Screening Test (DAST 10) was employed (Skinner, 1982), and dependence was measured with the Severity of Dependence Scale (SDS) (Gossop et al., 1995).

The difference from continuous and categorical variables was respectively analysed with with Student's t and chi-squared tests. For statistical analyses Stata 11.0 was employed.

For the in-depth analysis a brief draft was used, concerning specific moments connected with the relation with the substanc-

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es, that every interviewer developed based on the information that they gradually came to know, to be completed with any other sort of news considered useful for this research.

A summary of the analytical introduction to grounded theory (Glaser, Strauss, 1967) was employed as a guide to data qualitative analysis. By analysing the texts of the interviews, some recurring points were identified, which could be pinpointed by using keywords.

RESULTS

All interviewed subjects (36% females, 16% non-natives) have a fixed abode and an average monthly income of about one thousand euros; half of them hold a high school diploma, and half a degree. Many study or work, but 12% neither study nor work.

In the course of their life, they have tried several drugs, among which mainly cannabis and cocaine emerge, but only one subject irregularly consumed heroin by intravenous injection.

Table 1: Substances and perceived risk

	% Lifetime use	% Last Year use	% Low perceived risk
Cannabis	98	91	95
Cocaine	90	80	44
MDMA	76	42	71
LSD	63	28	48
Speed	56	33	51
Amyl nitrite	52	9	68
Hallucinogenic mushrooms	50	15	28
Opium	50	30	54
Ketamine	43	30	50
Crack	25	9	12
Salvia divinorum	25	4	66
Heroin	23	6	3
Benzodiazepines	16	9	27

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As to recent consumption, excluding cannabis, heroin and benzodiazepines, which are normally consumed in a continuous way, for all other substances irregular consumption prevails. As to risk perception, only heroin and crack are considered as dangerous substances; cannabis, hallucinogenic mushrooms, amyl nitrite and salvia divinorum are considered not very dangerous; instead, there is no clear classification for opium, speed, LSD, MDMA, cocaine, ketamine and benzodiazepines.

As to legal substances, 73% declared that they exceeded in drinking alcohol on at least one occasion over the thirty days before the interview, 63% tested positive at the binge drinking test, and 26% responded positively in at least three items of the CAGE test.

Overall, 51% started an illegal activity whatsoever in order to find money: 26% drug traffic, 24% theft of objects, 17% property violation, 10% theft of money and 1% fraud.

Over the last year, more than half of the interviewed subjects had behaviours classified as risky (such as unprotected sex, dangerous driving or exchange of syringes) and one out of three reported violent behaviours (such as scuffles, vandalism or threats).

As to networking and social support, almost everybody thinks they have a family helping, backing and listening to them; that they are part of a network of friends who can also help, back and listen. Furthermore that they have somebody particularly close with whom they can share joys and sorrows.

Excluding one case, all of them spend their time carrying out recreational activities at least once a week. 91% have a positive identity, are satisfied with themselves and reckon they are worth just as much as the others.

Based on the positive result of the SDS test, 59% proved to be addicted to at least one substance, alone or in combination with others: 36% to cocaine, 34% to cannabis, 12% to MDMA, 12% to opium, 8% to ketamine, 5% to speed, 4% to benzodi-

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azepines, 3% to heroin, 1% to hallucinogenic mushrooms and 1% to salvia divinorum.

Other aspects considered concern the frequency of use, the dosage, the costs and the expense. If we consider any other substances except cannabis, the average consumption is twice a week (7/8 episodes in a month), differently from cannabis, that is used with an at least daily frequency. Those who consume heroin do so every two days; those who use benzodiazepines without a medical prescription, instead, do so once a week; cocaine, opium, ketamine and LSD consumers do so every two/three weeks. As to the other substances, frequencies are even lower: MDMA and speed once/twice a month; salvia divinorum, amyl nitrite, crack and hallucinogenic mushrooms every two months.

Considering the average monthly income available, 40% spend a monthly average sum for buying illegal substances, whereas 42% use at least half of their available income. It must be noted that in 24% of cases the expense is definitely higher than the income.

Phenomenology of purchase – The moment of purchase was observed by analysing a few aspects related to the choice of the channel, the reference person, the place and the circumstances. Special attention was paid to the identification of some characteristics of the purchasers, in particular whether they carry out that activity as their main source of income or just irregularly.

Concerning the decision of purchasing one specific substance, the order of prevalence of the answers is the following: pleasure, wish, entertainment, relax, hope to feel better, intention of experiencing situations in a different way and that of being in company with others. Lower than 10% are the percentages of those who consume drugs in order to find some distraction, to feel peculiar effects, to experience altered state of consciousness, or because of addiction, routinely or in order to have more energies to face the night.

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Table 2: Phenomenology of purchase

Why do you decide to purchase drugs?	I like it 31% I wish so 16% For fun 15% To relax 12% To feel better 12% To experience situations in a different way 11% To be in company with others 11%
How do you get your information?	I ask my acquaintances 40% Trusted channels 27% I don't get any information 15%
How did you choose this channel?	I trusted the others 40% I felt comfortable with it 12% Quality/price ratio 12%

The most frequent circumstances determining purchases are connected with social situations, particular contexts such as parties, raves or disco nights, as well as particular situations and events; when people feel like having fun.

In order to find information on what the market offers, consumers turn to people they know and use trusted channels. In less than 10% of cases, the potential purchasers rely on their own experience, ask the people present in a certain place for information, trust the impressions of consumers that they consider more expert, or they rely on word of mouth or on pushers. Only four interviewed subjects declared that they referred to specialised websites.

Most of them, when they purchase, refer to trusted channels, and many find information talking with people whom they consider competent in this field. Lower is the percentage of those who buy the substances from trusted intermediaries, from unknown people present in that place or context or from unknown people they have met on the street. 15% don't get any informa-

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tion and buy without any knowledge, and only a tiny share declares that they self-produce the substances that they habitually consume.

Another aspect that needs more in-depth analysing concerns the characteristics of the seller that habitual consumers turn to. In one case out of three, the person from whom they buy deals drugs for a living, while for the others such activity is instead aimed at supplementing their income or as a second job. A lower share does not do that habitually, but just supplies the substance to their friends, or sells it only in specific situations. In some cases these are students who, by doing so, pay their university fees, or people who occasionally gain some financial support from this activity. In two thirds of the cases the dealer sells more substances, in 20% of them he sells just one, but most of the interviewed subjects cannot answer accurately, because they were never interested in this aspect.

In general, the decision of turning to a specific person (or of using a specific channel) for the purchase of drugs seems to be connected with trust. Other answers have relevantly lower percentages: for some, such choice is motivated by the fact that they were previously satisfied with that seller, for others by the favourable quality/price ratio or by the better quality of the products. In some cases, other, less objective aspects are relevant, such as for instance the pusher's ready availability and complete willingness to help, the lack of good alternatives, the perception of a higher security in comparison with other sources, in particular with occasional street-purchases. Sometimes the choice is facilitated by the fact that the dealers are themselves consumers or producers of the drugs they sell, therefore they obtain trust regardless of anything else: *"it'll definitely do no harm*".

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Table 3: The seller

From whom do you buy?	A trusted channel 57% Friends 37% A trusted person who acts as an intermediary with the dealer 10%
Where do you buy?	In the pusher's house 40% In a public place 34% In my place 31% In the place of an event 19%
On which circumstances?	When I'm company with others 19% It's all the same 17% Only on particular occasions/events 15% When I want to have fun 14%
Does the pusher deal drugs for a living?	Yes, for a living 31% No, it's a second job 16% No, he just supplies the substance 14%

As far as the place is concerned, most subjects declare that they purchase in the pusher's house or in their own, or in a public place that changes from time to time. Much lower is the percentage of those who buy on the very place of the music or entertainment event they are taking part in, in an outdoor place (like a bar) or in a public place they habitually hang out at.

As a brief description of the moment of purchase, most consumers say they buy alone (66%) and a much lower share do so in a group (12%); to many, the purchase is occasional and unplanned (27%). In 30% of cases the contact occurs by phone, and in very few cases on the internet, through a chat-line (2%). A relevant share purchases only if they have the opportunity to see the substance before (15%), to negotiate the price (24%), to verify its quantity (22%) and to try it (20%).

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For most of them (11%) the contact is occasional, but the fact of not knowing the pusher (9%) and the possibility of having to buy the substance in a public place are the aspects that mostly dissuade them from such an option.

In case of an optimal relationship with the dealer, the possibility exists of having their telephone number (9%), of weighing the substances (9%) and trying them beforehand (8%), as well as of negotiating the price (4%). Some planned the contact previously (5%) and want to have the chance of withdrawing from the purchase (1%) or of coming back to the seller with complaints (4%).

The purchase must absolutely be avoided when the seller isn't so known (according to 9% of the subjects); in order not to be identified, it is necessary to avoid purchasing in public places (4%), also because in these cases the substances could be of poor quality (4%); furthermore, the purchase should be avoided when the substance cannot be checked (3%).

Phenomenology of consumption – Most of the interviewed subjects consume the substances both alone and in company with others, whereas half of them use drugs only with the friends they know well, and one out of five do so alone. As far as the place is concerned, a lot of them use their own house, one out of three uses the substances anywhere, and many during parties or in discos. Lower are the percentages of those who consume in bars, in public places, in protected contexts, during concerts, in natural settings, in their own car or on the workplace.

As to the emotional states in which people consume, euphoric (27%) or quiet (24%) situations are preferred.

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Table 4: Phenomenology of consumption

With whom do you consume?	Both alone and with others 56% With friends that I know well 46% By myself 17%
Where do you consume?	At home 61% Anywhere 34% During parties 30% In discos 28% In public places 12%
Which situations do you prefer?	Parties 29% Convivial situations 27% Relaxing situations 15%
Which are the situations that you avoid?	When I'm with my family 25% Before working 22% During activities that require concentration 19% When I'm with people that I don't know and trust 13% When I'm sad 12%

More specifically, there are people who prefer to use psychoactive substances in such diverse situations as agitation (13%), physical and mental well-being (13%), sadness (11%), stress, happiness, serenity, tiredness and shyness. It must be noted that for a cannabis consumer out of five such substance can be consumed in whichever possible emotional state.

The most frequent consumption situations are parties, convivial moments with friends and relaxing situations. A lower than 10% share prefers the evenings, maybe before going to bed, but some prefer recreational situations, while they are watching a movie on TV or in crowded places. Lower than 5% is the percentage of those who consume in natural contexts, during their creative phases, on the workplace, or when they need to have social relations or to relax.

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Many avoid consumption if they are with their family, before going to work, when they have to carry out activities requiring concentration and when the substance is not adequate to the situation they are in. Lower are the percentages of those who avoid consumption when they are with people they do not know or people they do not trust, or when they are in emotional states of sadness. Moreover, there are those who do not consume if they have to go to school, in situations in which they do not feel at ease or they feel judged, when they have to drive motor vehicles, when they do not feel physically well, when they are in crowded places or when there are law enforcement officers nearby. 3% of them never consume when they are alone, when they are drunk, before practising sports and when they do not have much money available.

Table 5: Positive and negative practices

Negative practices	Letting the use become abuse 12% Using more substances on the same occasion 7% Consumption as a solitary practice 6%
Positive practices	Consuming only in appropriate situations 14% Consuming only when in a good mood 9%

As to the practices connected with consumption, among those deemed to be positive the need emerges to use drugs in the situations and moods considered as appropriate, or in the presence of somebody who can intervene in case of negative events. Lower, but interesting for the purposes of this research, are the percentages of answers saying that you should never consume drugs with people you do not know and that the substance should be checked by trusted people.

The practices considered negatively are those associated with an out-of-control consumption (which means, a use that becomes abuse) and the use of more substances in sequence. Furthermore, it is not considered positively to look at consumption

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as a practice to cultivate mainly in solitude, to use the substances as a particular form of self-treatment, to use them in situations or contexts considered as inappropriate, in moments of nervousness or agitation, or before starting to drive motor vehicles.

In one case out of three, the competences learnt on the consumption of substances come from direct experience, in one out of four from more knowledgeable friends and acquaintances, in 7% of cases from the observation of others, and in 5% they are acquired by searching for information and reading.

Consumption-related problems – Another important aspect concerns the problems perceived as deriving from the consumption of illegal substances, considering that 89% report that they had psychical problems over the last year.

Table 6: Problems attributed to consumption

Psychical disorders	86%	**Problematic consumption**	69%
Sleep disturbances	55%	Use of substances in inappropriate moments	45%
Memory disturbances	52%	Losing control of the substance use	34%
Depression and mood swings	50%	Addiction to drugs	28%
Anxiety	46%	Detoxification	5%
Paranoia	37%	Overdose	2%
Panic attacks	24%	Addiction to alcohol	12%
Physical and psychosomatic disorders	17%	**Relational sphere**	30%
Hallucinations	15%	Isolation from the others	20%
Sense of persecution	10%	Problems with justice	15%
Psychiatric problems	3%	**Health problems**	15%
Treatments with psychopharmacological drugs	2%	Road accidents	9%
		Heart problems	7%

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69% report problems due to problematic consumption (overdoses, losing control of the substance use, addiction to alcohol or drugs, use of substances in moments considered as inappropriate, or detoxifications), 30% report inconveniences in the relational sphere (problems with justice or isolation from the others), and 15% report health-related inconveniences (road accidents or heart problems). As to the specific problems, sleep or memory disturbances, depression, anxiety and use of substances in moments considered as inappropriate must be reported. One interviewed subject out of three, following problems due to the use of illegal substances, requested the assistance of health or professional structures at least once. 20% turned to an emergency department, 13% to a psychologist, 9% to a primary care physician, 7% were hospitalized, 5% turned to a psychiatrist, and 4% to other specialists. 10% resorted to specific treatments over the last year: 3% turned to an ED, 3% were hospitalized, 2% turned to a psychiatrist, 2% to a psychologist, and 1% to a primary-care physician.

Indirect problems, consequences and precautions – For an interviewed person out of three the use of illegal substances did not result in any problems, whereas many had various ones with their family, with law enforcement officers as well as with their partner, and feel uncomfortable in changing situations. One out of ten thinks they wasted huge amounts of money, and some had their driving licence revoked following drug-related road accidents.

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Table 7: Indirect problems, consequences, precautions

Indirect problems	Socialization problems 16% Family problems 15% Problems with law enforcement officers 13% Waste of huge amounts of money 12%
What consequences did they produce on you?	More aware and controlled consumption, in accordance with my limits 10% Consumption reduction 8% No consequences whatsoever on my consumption 6% Quitting completely the consumption of a substance 5%
Do you give yourself rules and/or take precautions?	Using substances with awareness 45% Paying attention to one's body's feedback 8% Not consuming in public places 7% Purchasing from trusted people 7% Using substances not routinely, but for specific purposes 7%

Following these problems, some report that they planned their consumption in a more aware way, controlling or reducing it in accordance with their own limits; a smaller share totally quit the use of a particular substance or remodulated its consumption in order to avoid problems with law enforcement officers. While some compromised their university studies, some others became isolated or totally changed their friends, and now take more precautions when they consume drugs.

The most common precaution is that of using substances with more awareness, which means in a more cautious way. Much lower are the percentages of those who declare that they pay more attention to their body's feedback, they do not consume drugs in public places, purchase them only from trusted people, consume them only for specific purposes and not routinely, avoid running into debt, try not to be noticed when they are purchasing or consuming, use a coded language for purchases, limit their own

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phone conversations, use substances only at home or consume only when their stomach is full.

Quality check - 81% of the interviewed subjects, before consuming, check the quality of the substances somehow: half of them try them first, one out of three trusts the seller, a very small share have them analysed or test them with chemical reagents. A small part of the interviewed subjects, indeed relevant for the purposes of our research, before consuming the substances observe their effects on others, mainly in case of opium and speed consumption.

Table 8: The quality check

Do you check the quality of the substances that you purchase and use?	I try them 54% I use my senses 51% I never check them 19%
How do you check them?	I trust the seller 30% I have them analysed 8% I observe their effects on others 6% I test them with chemical reagents 3%
By whom do you have them checked?	Myself 22% Knowledgeable friends/acquaintances 22% Trusted seller 11%
How did you learn the competences to check the substances?	From direct experience 52% From knowledgeable friends/acquaintances 36% By observing the others 10% By searching for information and reading 7%

As to quality checks, one interviewed person out of five does them alone, based on their skills and experience, or refers to friends or acquaintances whom they consider more knowledgeable. One out of ten has their trusted seller do this check.

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For the majority of the interviewed subjects, the specific competences to evaluate the substances are learnt through experience, from more knowledgeable people or by observing the others. Lower are the percentages of those who first find information in a generic way, by reading books and magazines or by referring to consumers' self-help groups.

In order to check the quality of the substances, 61% of the interviewed subjects evaluate the effect after trying a minimum amount of them, 41% use sight, 34% sniff them, 27% taste them, 8% check them with touch and 8% use chemical reagents.

As to the single substances – here it is also possible that more techniques are employed at the same time –, the effect is evaluated after tasting or trying them, mostly for what concerns MDMA, speed and ketamine.

Table 9: Quality check techniques

	Cannabis (91)	Cocaine (80)	MDMA (42)	Speed (33)	Opium (30)	Ketamine (30)	LSD (28)
People who evaluate the effect after tasting/trying the substance	63%	59%	71%	67%	57%	67%	57%
Use sight (colour, shape)	43%	40%	57%	73%	63%	77%	71%
Use the sense of smell/odour	37%	34%	52%	67%	57%	70%	64%
Use taste (flavour, anaesthetization)	29%	30%	36%	36%	30%	40%	29%
Use touch/consistency	9%	10%	17%	21%	20%	20%	18%
Use reagents	8%	8%	10%	15%	7%	10%	11%
Do at least one check	70%	56%	69%	48%	57%	40%	21%

Sight is mostly used for ketamine, LSD and speed, that is, substances for which the check is done by touching them and probing their consistency. A relevant share of opium, speed and LSD consumers evaluate the substance by its colour, shape or flavour.

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The quality, in particular, is checked through taste. Reagents are used with speed, LSD, opium and MDMA. Such techniques are employed for at least one substance by 66% of the interviewed subjects, and most checks concern cannabis and MDMA consumption.

Myths and beliefs – The last aspect concerns the myths and beliefs on the qualities of the substances for which, as other authors already emphasized, irrational factors, sometimes contradicting each other, prevail. Hereunder the results of such interviews are reported without any specific comments.

Marijuana, in order to be of good quality, needs to have a lot of pollen and resinous, white/orange and tending towards green turnip tops. A poor quality plant can be recognized because it has many seeds and twigs, it is very dry and has a very dark colour. When smoked, it scrapes the throat.

Ketamine needs to have a dark colour tending towards brownish, with many visible crystals. The flavour has to be bitter. If instead it has a white colour and is hard to break, it either means that is was poorly cooked or that it is cut with other substances. In this case, buying it is not worthwhile.

MDMA needs to be formed by transparent pebbles with many crystals and have a bitter flavour. Once it is diluted in water, also the crystals must melt. If instead it appears as a dust, it very probably means that it was cut with other products.

Cocaine dust needs to be very fine and white coloured, and to "shine". According to some people, if put in mouth it has to make it prickle and taste bitter, while according to others it must anaesthetize the teeth and the tongue. If it is of poor quality, it burns the nostrils very much; when cut, it stimulates defecation.

Heroin needs to be dusty, while if it is wet or very sticky it means that it is of poor quality.

Speed needs to have a white colour and a pungent, kind of chemical odour, and when touched it must have a doughy or

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creamy consistency. Once in mouth, it has to taste like a detergent, a solvent or ammonia.

Good quality opium, instead, is dry, soft and seasoned.

Conclusions

From the study a target of "normal" people emerges, with fixed abode and a medium-high education level. They are polydrug users with a high abuse rate of alcoholic drinks.

For many, the use of illegal substances resulted in problems of various sorts with their family, with law enforcement officers or with the partner, and they do not feel at ease in changing situations.

Many report sleep and memory problems, anxiety and depression. One out of three turned to health structures or professionals.

As to risk perception, many, following consumption, are afraid of being classified as *drug addicts*, and to cause themselves physical, psychological and economic damages; only a minority, instead, fears becoming addicted.

As to the moment of consumption (preferably at home), they do some preventive checks on the substances, referring also to experts; they avoid specific modes of consumption (syringes), they do not use more substances together (mixes) and avoid exchanging the consumption instruments/tools (e.g. disposable straws).

There are some common rules to observe, which means that it is better to consume drugs with trusted people, never before activities requiring physical and mental commitment of the participants, never with unknown people, never on the workplace, and never in public places. In order to keep consumption secret, the contacts with the "world of drugs" must occur only if strictly necessary; mentioning them in family and work conversations should be avoided; communications must be limited, if possible by using coded languages.

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In order to find information on the market, people turn to their acquaintances or use trusted channels. The choice of specific dealers is motivated by how much people trust them, by the quality of the products they sell, by the more favourable quality/price ratio they offer and by their availability and willingness to help. Pushers who consume or produce the substances they sell are considered more trustworthy.

Most consumers purchase drugs in the seller's or in their own house. Many buy them only if they have the seller's phone number, if they can try a sample of them or if they can check their quantity and negotiate the price.

Before consuming the substances, most people check their quality by trying them, while some observe their effects on others.

Discussion

In the course of time, many interviewed subjects planned their own consumption or modified its intensity following health problems, changes in their economic conditions, an increased knowledge of the not-to-exceed limits and a better handling of the techniques aimed at reaching the desired effects.

These are cross aspects emerging from the information collected, which express not only the fear of being identified, labelled and stigmatised, but also the research for more appropriate situations for consumption, which seem to differentiate a *social* consumption (entertainment) from a *sick* one (self-treatment).

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10. Consumption, trends and risk assessment: the viewpoint of experts

Aims

In order to know and assess the risks present in the metropolitan area of Bologna, during 2013 six operators, expert on substances abuse were interviewed: two ED physicians (from the "Ospedale Maggiore" and the "Ospedale Sant'Orsola" in Bologna), one physician of the extra-territorial emergency service (ambulance "118" service), one educator of the ASL mobile unit, a coroner of the University of Bologna analysis laboratory and an operator in charge of the harm reduction information desk (LAB 57).

All of them were posed questions in relation to the substances present on the market, the new consumption trends and the existence of particular risky behaviours.

Results

As to the substances present on the market, all interviewed subjects underline what follows:

1) the increased problematic cannabis consumption, witnessed by numerous cases of ED accesses in the city hospitals; furthermore, the presence is reported of *non-natural*, *adulterated* or *synthetic* cannabinoids, much stronger than the traditional compounds;

2) the presence of a new type of opioid, "white heroin", which is characterized, apart from the colour, also by the high percentage of active principle. Such substance is not injected, but smoked or inhaled, by apparently normal people, who are very different from the typical drug addict, so common in the Nineties. The mode of consumption seems to be decisive in maintaining a positive self-perception by the consumer.

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While a new increase in the use of LSD must be noted, also an increased use of ketamine and an abuse of psychopharmaceutical drugs, mainly benzodiazepines, have to be reported.

Table 1: Substances present on the market

Forensic medicine Analysis laboratory	Availability of a product of the "white heroin" type, with a very high percentage of active principle; modification of the consumption modes: the subjects do not think they are *junkies*, because they do not consume the substances by injection. Huge diffusion of cannabis, almost considered as a "non-drug".
Emergency Department physician 1	The problematic consumption of cannabis is increasing, and also a new increase in LSD consumption emerges. No one uses heroin by intravenous injection; only the old addicts still consume it in this way. An increase in the use of ketamine must be reported.
Extra-territorial emergency service physician	Cannabis very rarely involves emergency services, and when this occurs it is just for the anxiety connected with the first uses. These are more and more adulterated substances, no more "clean" hashish, but something that can be compared to the GMOs.
Emergency Department physician 2	Accesses connected with the consumption of cannabinoids by the synthetic composition are growing more numerous. The abuse of psychopharmacological drugs (benzodiazepines) is a widespread phenomenon, but not observed.
Damage-reduction desk operator	As far as we can see, there are people who consume cannabis habitually, that is every day. The problems they can have are several: if they stick to cannabis alone those are not many, but when heavier substances add to it they grow much more numerous, and cannabis disappears. Among the youngest, the use of smoked heroin is increasing. Over the last 5 years the use of ketamine has increased.

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From the various interviews the perception emerges of a large bracket of *socially integrated consumers*, who can no longer be labelled on the basis on their age, gender, education level or social class. According to the coroner, the youngest are distinguished by their low risk perception, while the adults are by a performance-oriented consumption associated with basic forms of self-treatment. More than "fun for the sake of it", the wish emerges to keep up with the others' working or studying paces, and also to "transgress" in a generic sense. For instance, the ED physician remarks that ED accesses are more numerous at the beginning of the week than at the end of it.

Along with the concurrent abuse of alcoholic drinks and drugs, particular profiles emerge, associated with the use of specific substances, like for example ketamine, a product that determines an alteration in space and danger perception faculties.

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Table 2: Particular targets

Forensic medicine Analysis laboratory	The youngest are not aware either of the risk or of what they consume. The adults are people stressed by their jobs and by the necessity of obtaining results and high performances. That is why they more frequently resort to these substances, in order to keep up with such pace. And there is also a relevant amount of wish for transgression and vice, and habits that become consolidated in time.
Emergency Department physician 1	Urgent accesses of people who used or abused substances. The consumption of substances is higher at the beginning of the week than in weekends. Age 18/35 years, mostly students, but also some workers. Accesses due to tachycardia and agitation, dizziness and general malaise, following the consumption of more substances. Sometimes in combination with alcoholic and energetic drinks. The target of consuming subjects has changed: they no longer are the typical drug addicts, but normal people who use substances in order to improve particular performances and be more productive on their workplace, Ketamine's effects are very strong, and result in the loss of the sense of space and danger.
Emergency Department physician 2	In our hospital work we have identified a bracket of very young people who use synthetic cannabinoids, which are purchased in particular shops. The target has changed; on the one hand there are very young users with different substances, on the other adults. Alcohol abuse, instead, is common to all age brackets and is increasing relevantly.

All interviewed subjects note an increase in the ED accesses due to the abuse of legal (alcohol and psychopharmacological drugs), illegal (cannabis, cocaine, ketamine and heroin) and *borderline* (amphetamines and benzodiazepines) substances, with a tendency to polydrug consumption.

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Table 3: Trends

Forensic medicine Analysis laboratory	The increased ED accesses are connected with the peculiarities of the market: white heroin (acute narcotism); combinations of illegal substances; combinations of real drugs and psychotropic substances in general, such as alcohol, psychopharmacological drugs and benzodiazepines. The element that causes most ED accesses is the use of substances whose synthetic composition is unknown and that have recently been introduced into the market. Many synthetic substances are conveyed through vegetal matrixes, therefore the concept of drug is mistaken for that of natural product, that by definition is harmless.
Emergency Department physician 1	The mode of use has changed mainly for heroin, that consumers prefer to sniff or smoke, rather than use by intravenous injection. The currently favourite type of heroin is the white one – while in the past the brown one prevailed –, because its effects are stronger.
Mobile unit educator	As to heroin, it must be noted that its consumption has changed (from injected to smoked). Since we are in contact with foreigners and immigrants, we have probably been among the first who noted this phenomenon.
Extra-territorial emergency service physician	Use of amphetaminic substances, therefore cases of hypothermia, …and when somebody calls, it often is a patient with serious problems. This frequently occurs to very young people. Ketamine is particularly devastating. I happened to see some terrible overdose effects.
Emergency Department physician 2	ED accesses due to the use of legal and illegal psychoactive substances is increasing. Also the modes of consumption have changed: heroin is used together with cocaine, with different modes of consumption even during the same episode. It is hard to find people who consume by injection. Only the historical junkies do so. A bigger explosion of consumption may be noted among the so-called "normal" population.

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The combinations of different substances, whether *legal/legal, legal/illegal* or *illegal/illegal*, reflect the modified risk perceptions, in relation to which the various products are used because of their specific psychoactive properties. Another factor is the impossibility of knowing the exact composition of the drugs present on the market, with all the consequences that this implies in terms of immediate risks and future consequences for the health and the psycho-physical integrity of consumers.

In such a *socially integrated* market, many synthetic substances are conveyed through vegetal matrixes, with the result of mistaking the drug for a natural product, and a consequent reduction of of the final users' attention threshold.

In general terms, the various professionals remark that the potential risks for consumers are mainly health-related, connected with traumatic events (accidents, intoxications or overdoses). It is more difficult to identify chronic problems or experiences associated with the risk of addiction.

In daily practice, operators no longer trust their patients' declarations, therefore every single event is deemed to be serious. Even an ED access due to a cannabis abuse is dealt with with a lot of caution.

The abuse of benzodiazepines is mainly frequent in targets of "normal" people, and is a very underestimated phenomenon, emerging only in seriously addicted subjects following withdrawal symptoms.

A change must also be noted in the composition of the heroin circulating on the market, with the consequence that, in emergency situations, the use of traditional antagonists by health operators sometimes produces unusual effects in patients.

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Table 4: Obervations

Forensic medicine Analysis laboratory	Risks are mainly of a medical sort: acute and chronic. As far as acute risks are concerned, when we notice them, we establish a cause-effect relationship. As to chronic risks, unfortunately the damage stabilizes slowly, and it is not possible to identify it in an unambiguous way.
Emergency Department physician 1	We do not trust what patients say, because according to them those are just all "pills", and they ignore the difference between the various substances. Because of this, our approach consists in dealing with them all as if they had a serious problem. While in the past it used to be underestimated, now an access due to cannabis consumption is looked at carefully.
Extra-territorial emergency service physician	Opioids have changed: the problem no longer is pure heroin, because they have a chemically modified structure, and such change results in the emerging of unusual side-effects, when the antagonist is used. Once it was very easy to treat an opioids abuse or overdose, because you had the antagonist, you administered Narcan and they felt immediately better. Now, instead, when we use Narcan we run the risk of causing convulsions and states of agitation.
Emergency Department physician 2	Benzodiazepines abuse is an underestimated phenomenon that is taking root among normal people who turn to an ED following withdrawal symptoms or after developing a serious addiction.

Discussion

Consumption (and problematic consumption) of psychoactive substances by socially integrated people is increasing.

The tendency must be reported to the concurrent consumption of more products (*legal/legal, legal/illegal* and *illegal/illegal*),

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which reflects the changes occurred in the various risk perceptions, in which only acute effects are deemed to be dangerous, and chronic effects are disregarded.

The impossibility of knowing the composition of the substances used increases the risk of negative events.

As to the substances that are present on the market, not only the find of a new sort of opioids, the "white heroin" (with a high percentage of active principle) must be noted, but also an increase in the problematic consumption of cannabis, in the use of ketamine and in the abuse of psychopharmaceutical drugs (benzodiazepines).

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Intervention models

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11. The psychoactive substances *quick alert system* in the province of Bologna

Aims

The purpose of this project for the creation of a drugs quick alert system (SARD, *Sistema di allerta rapida sulle droghe*) in the metropolitan area of Bologna, financed by the Emilia Romagna region, is to report real time and spread information related to traumatic effects (deaths from overdose, ED accesses due to overdoses) and circulating substances (active principle, adulterants, products to cut drugs with, etc.) among the professionals operating in the province of Bologna.

The project is supported by: Provincial SERTs; Mobile Methadone Unit; Emergency Departments; 118 Emergency Service; Municipal Police; Fiscal Police; State Police; social work private institutions and therapeutic communities.

Methods

The activities carried out can be summarized in the following scheme: 1) identifying the reference target, 2) creating the network, 3) creating the information system, 4) creating the software, 5) identifying the network of reference people, 6) training the reference people 7) monitoring the deaths from overdose, 8) monitoring the ED accesses due to overdoses.

An accurate analysis was carried out of the data flows, with reference to the data present on the territory that could be used every month in a structured way (deaths from overdose, ED accesses due to overdoses), and the first contacts were made with the various reference people in the information systems (the Mortality Office of Bologna ASL, the hospital computerized information system of Bologna ASL Hospital Information Centre - SIO: Sistema Informativo Ospedaliero - and Sant'Orsola Hospital Centre).

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The data related to deaths from overdose are extracted by "hand search" from ISTAT death-related paper records; the data related to the ED accesses due to overdoses are selected by the SIO by specific keywords (Pavarin et al., 2011; Pavarin, 2014).

The alert system, therefore, produces two sorts of data: 1) the reports from the various operators (accessible only to a limited number of users accredited by the system) and the real *alerts* (available to the entire network and, in some cases, to all citizens); 2) the monthly statistics on lethal and non-lethal overdoses (accessible to all in the unprotected part of the website[8]).

In order to create the network, a target was identified of subjects A) interested in the data, B) who produced themselves interesting data.

Six different typologies of information providers were codified, for each of which a report sheet was co-created: Analysis laboratory, Emergency Departments, 118 Emergency Service, Law Enforcement agencies, public and private drug addiction service operators, and ASL Mortality office.

Based on the potentially available data, a software was created on a protected, limited access website where, by using ad hoc sheets, the various network access points could either insert or acquire the information deemed to be useful[9].

To each SARD access typology more network points may belong, to which a data reference person corresponds with reporting responsibilities. By way of example, here follows the analysis laboratory sheet.

8. https://allertarapidadroghebologna.ausl.bologna.it/Public/StatisticheMain.aspx
9. https://allertarapidadroghebologna.ausl.bologna.it/Account/Login.aspx

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Table 1: Analysis laboratory sheet

Reporting subject	
Report date	
Finding place of the sample	
Finding date of the sample	
Name of the substance	
% Active principles present	
Contents (in mg)	
Colour	
Pharmaceutical form	
Weight	

General characteristics of the system – The system consists of a data archive, fed by different sources and accessible through internet.

It allows for data archiving, consulting and sending. More network points may belong to each access typology, to which a data reference person corresponds with reporting duties.

Mail and text message communications are provided for, in case the authorized operators deem it necessary to raise a dangerous substance alert. The aim is to guarantee both a better circulation of information and a ready intervention.

Security Systems Characteristics - Web-based application on Microsoft ASP.Net technology. Communication security between client and server with Secure Sockets Layer (SSL).

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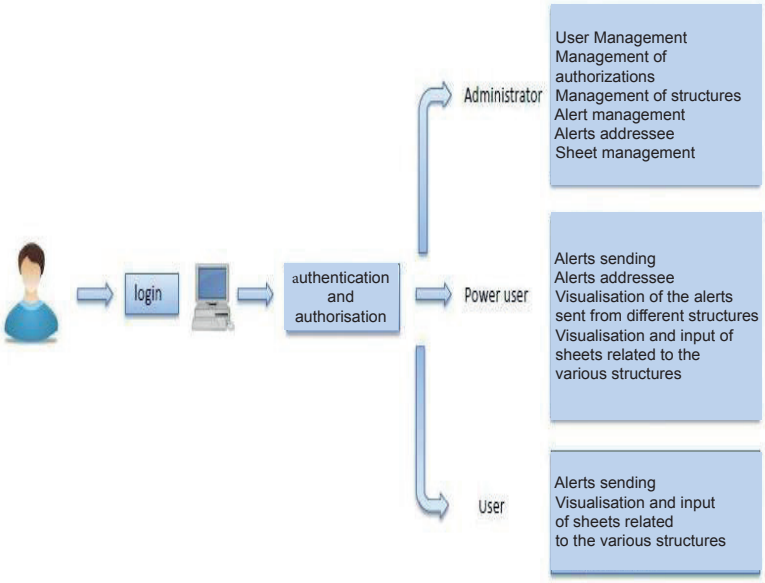
Table 2: Operative flow



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Access limited only to authorised users. Access security with Membership provider Microsoft. The user roles are differentiated into three levels: Administrator (with access to all information), Power User (with access limited to a certain amount of information) and User (who can only insert information).

More specifically, the administrator manages, apart from the access authorizations, all the system data and, after an ad hoc check, sends the alerts. The power user, instead, can also read other subjects' reports.

Results

Overall, 32 structures were accredited, corresponding to a total amount of 56 operators (Table 3). The most relevant number concerns law enforcement agencies and Emergency Departments.

Table 3: Accredited subjects

Type of structure	No. of accredited structures	Type of sheet	Number of accredited profiles
Emergency Departments	**6**	ED and 118	**14**
Law enforcement agencies	**5**	Law enforcement agencies	**20**
Analysis Laboratory	**1**	Analysis Laboratory	**1**
Private Social work structures	**8**	Operators	**8**
SERTs	**12**	Operators	**13**

Reports - From 2011 to 2014 there were 25 reports, among which 11 alert requests.

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Table 4: Reports

STRUCTURE	Substance	Active principle	Presence of other substances
118 central control	heroin		
Fiscal Police	other		Cathine and/or Cathinone
State Police	6 Cocaina	From 11% to 71%	Phenacetin, lidocaine, levamisole, mannitol
State Police	2 Hashish	From 12% to 17%	
State Police	2 Marijuana	9%	
State Police	Heroin	7%	
State Police	MDMA	18%	

Most of the *not serious* reports concerned cocaine (cut with other harmful substances), followed by cannabinoids, heroin and MDMA (Table 4).

As to the 11 alert requests, 4 concerned the use of heroin, 4 – in a more generic sense – opioids, and 3 cocaine. In five cases an overdose in unusual circumstances had been reported (in all cases by "118"), and three were anomalous reactions to an administered substance (one for cocaine, one for heroin and one for "white" heroin). In two cases the State Police had reported the presence of cocaine with a high active principle concentration.

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Table 5 Alerts

	Date	Substance	Description
SERT	22/11/2011	Heroin	Anomalous reaction
Mobile unit	24/11/2011	Heroin	"Peruvian" white heroin with anomalous effects
118 central control	05/03/2012	Opiates	Anomalous overdose
118 central control	05/03/2012	Opiates	Anomalous overdose
118 central control	08/03/2012	Heroin	Anomalous overdose
118 central control	13/03/2012	Opiates	
State Police	23/07/2012	Cocaine	High active principle concentration
North district ED	11/08/2012	Cocaine	Anomalous reaction
State Police	25/10/2012	Cocaine	High active principle concentration
118 central control	02/09/2013	Opioids	Anomalous overdose
118 central control	09/11/2013	Heroin	Anomalous overdose

Monthly statistics – Using the data present in the two archives, every month statistics are produced on the ED accesses due to overdoses and on the deaths from overdose within the Metropolitan Area of Bologna.

Routinely, every month three data tables are updated concerning deaths from overdose on the local territory and the ED accesses due to overdoses: 1) by year and month, 2) by year and weekday, 3) by characteristics of the subjects.

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Table 6: Metropolitan Area of Bologna.
Deaths from overdose and ED accesses due to overdoses: month

YEAR ▶	Deaths from overdose			ED accesses to due overdoses		
MONTH ▼	**2012**	**2013**	**2014**	**2012**	**2013**	**2014**
January	2	1	2	3	9	6
February	1	0	1	12	4	9
March	3	4	2	18	7	8
April	3	2	1	9	3	5
May	1	0	1	6	16	10
June	1	1	0	13	9	8
July	1	1	2	8	16	6
August	3	4	0	7	12	9
September	0	2	0	8	15	4
October	0	1	1	11	7	11
January-October	**15**	**16**	**10**	**95**	**98**	**76**
November	0	2	-	6	9	-
December	1	1	-	12	5	-
January/December	**16**	**19**	**-**	**113**	**112**	**-**

As compared with the previous years, in which an increase had occurred in deaths from overdose, but not in ED accesses – thus emphasizing a higher lethality rate –, over the first ten months of 2014 the situation seems to have improved. This is mainly due to the relevant decrease in the number of deaths during the summer period, in which only 2 cases occurred from June to September (five cases in 2012 and eight cases in 2013). Such decrease is more evident during weekends, when, with reference to the period from January to October in both years, the number of cases from Friday to Sunday diminishes from the 11 counted in 2013 to the 5 counted in 2014.

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Table 7: Metropolitan Area of Bologna. Deaths from overdose and ED accesses due to overdoses over the first ten months of the year: characteristics

	Deaths from overdose			ED accesses due to overdoses		
	2012	**2013**	**2014**	**2012**	**2013**	**2014**
January/October	15	16	10	95	98	76
Average age	37.0	37.5	37.8	36.0	37.8	38.3
% Females	6.7	6.3	10.0	25.3	12.2	13.2
% Non-residents	26.7	43.8	30.0	48.4	55.1	44.7
% Non-natives	33.3	25.0	10.0	11.6	25.5	19.7
% Unknown to SERTs	46.7	31.3	30.0	88.4	74.5	48.7

Another aspect concerns the characteristics of these subjects: the presence is reported of a relevant number of SERT users or ex-users.

As far as deaths and ED accesses are concerned, the average age and the percentages of females and subjects known to the SERTs are increasing; instead, the number of non-residents and non-natives is decreasing. It must be noted that, over the first ten months of 2014, 49% of ED accesses concerned SERT users or ex-users.

Conclusions

From the analysis of the data present in the SARD system interesting aspects emerge, connected with both the substances circulating on the territory and the characteristics of the subjects deceased for overdose.

In fact, the presence is reported of substances ("white heroin" and cocaine) with a high concentration of active principle. In the

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case of cocaine, the presence emerges of the harmful substances it is cut with (levamisole).

In some cases of non-lethal overdoses, some "anomalous reactions" are reported, which indicate a not perfect knowledge of the products used by both consumers and health operators.

Among deaths from overdose, in which cases the lethality is higher, many of the subjects involved are SERT users or ex-users – a datum that is increasing.

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Conclusions

Problematic consumption – While the number of subjects who turned to a SERT or an ED, or were hospitalized for use or abuse of illegal substances (PCs, "problematic consumers") is stable, the number of deaths from overdose is increasing. In particular, the decrease emerges of the incidence of heroin's problematic consumption and the increase of that of cocaine and cannabis. The socio-economic and personal characteristics of PCs are changing, too: the average age, the percentage of non-natives and people of no fixed abode are increasing.

Emergency Department accesses – The number of ED accesses is increasing: these are people aged between 30 and 40 years, mostly males, natives and residents. At the moment of the access, many were already assisted by the SERTs or the mental health services (MHS). As to the substances of abuse, opioids prevail (decreasing), followed by cocaine and cannabis (increasing). Lower than 1% are the percentages of amphetamines, LSD, ketamine and MDMA abuses. In one case out of five combinations are reported of illegal substances with alcohol. Furthermore, an increase of the average age and a decrease in the number of night and weekend accesses emerge, which means that abuses due to not merely recreational consumption also occur.

Addiction – Apart from the historical core of intravenous heroin users, SERT users include many different groups of drug addicts: foreigners, new heroin addicts (heroin smokers) and cocaine addicts non-natives. Among the new accesses, the average age, the number of non-natives and the percentages of students and people with a medium-high education level are increasing. It must also be noted that in one incident case out of ten the abuse concerns other substances than heroin, cocaine and cannabis. With time, the number of heroin intravenous users is diminishing, while that of heroin smokers is increasing.

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Non-lethal overdoses – Numerous ED accesses due to non-lethal overdoses concern non-natives and people who are not resident in the Metropolitan Area of Bologna. Many of them were already in contact with a SERT, and half turned to an ED more than once due to overdose episodes. Another relevant aspect is the high amount of people who refuse the proposed treatment or leave the ED voluntarily. In most cases the overdose episodes are associated with the use of heroin, alone or in combination with alcohol, benzodiazepines and cocaine. Moreover, cases are reported of overdoses exclusively concerning the consumption of GHB, ketamine, amphetamines and cocaine.

Lethal overdoses – A relevant share of deaths from overdose concern subjects who do not reside in the region and are non-natives, normally younger than average. Among residents, the risk is higher for males, in the period before 2001, for those who are less than 40 years' old and for those who live in the most densely inhabited areas.

The drug market and the economic crisis – SERTs are referred to by a higher and higher number of unemployed people. A part of them is beginning to consider drug dealing and the related collateral activities as economic resources that can replace legal businesses. Moreover, the presence emerges of a clandestine sales network of low-cost medicines, as well as an increase in the inappropriate use of psychopharmaceutical drugs (benzodiazepines) and alcohol. Another substance present on the market is ketamine, whose price has relevantly diminished because of the increased number of consumers.

The market adjusts to the crisis, consumption decreases and costs too, with a consequently worsened quality/price ratio of the substances. For instance, heroin and cocaine are more easily purchasable (low prices) and available (broader dealing network), but of poor quality. Another aspect emerging is the ten-

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dency to collective (and no longer individual) purchasing, and to self-production, especially of marijuana.

Perceived disorders and damage reduction self-practices – For many consumers the continuous use of illegal substances resulted in various problems with their family, with drug enforcement officers and with their partners; plus, they do not feel at ease in changing situations. Many report sleep and memory disturbances, anxiety and depression. One out of three turned to health structures or professionals. In the course of time, many consumers planned their use of substances or modified its intensity because of health problems, changes in their economic conditions, a higher knowledge of the not-to-exceed limits and a better handling of the techniques aimed at reaching the desired effects.

Consumption trends and risk assessment – The problematic consumption of psychoactive substances by socially integrated people is increasing. The presence on the market must be noted of "white heroin" (with a high percentage of active principle), as well as the widespread use of ketamine, the abuse of benzodiazepines and an increase in the problematic consumption of cannabis.

Consumers, operators and experts unanimously report a tendency to polydrug consumption, with different combinations (legal/legal, legal/illegal, illegal/illegal), which reflect the current changes in the various risk perceptions: consumers consider only the acute effects as dangerous, and neglect those determined by continuous use. As a consequence of consumption, most people are afraid of the social stigma and the label of "drug addicts", or to cause themselves physical, psychological and economic damages; only a minority instead, is afraid of becoming addicted.

Drug use – From the studies carried on on the territory, a high diffusion of cannabis emerges in large brackets of the population, with a higher prevalence among youngsters aged less than 25. Such consumption, very often justified as a particular form

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of self-treatment for several malaises, with time seems to have generated similar models of dependence to those of tobacco.

Alcohol – Consumption is diminishing, also because of the economic crisis, but dangerous drinking styles are increasing. Special attention must be paid to (young and less young) women and second generation immigrants. From the studies on minors – where a strong relation is reported between the use of alcohol, tobacco and cannabis –, a high abuse emerges of alcoholic drinks. Two thirds of ED accesses due to alcohol-related problems concern alcohol abuses without addiction: Italian males younger than 30 years who also use illegal substances or medicines, at night during weekends.

The quick alert system – From the analysis of the data shared between the subjects and the services connected in a network within the quick alert system, interesting aspects emerge related to the substances circulating in the territory and to the characteristics of the subjects deceased for an overdose. In fact, the presence must be noted of substances ("white heroin" and cocaine) with a high concentration of active principle. In the case of cocaine, the presence is emphasized of harmful substances to cut the drug with (such as levamisole).

Among the deaths from overdose – in which cases the lethality rate is higher –, it must be noted that many subjects involved are SERT users or ex-users, and this datum is increasing.

A few observations

Socially integrated drug users - In the past few years numerous studies documented a major change in the illegal substances market and in user habits, amongst which the declining use of heroin and the use of recreational and performance-enhancing substances, in a context where most illegal drug users are poly-drug users.

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The consumption of such substances does not only pertain to the most disadvantaged social spheres or to the fringes of marginalization, but seems to be transversal to cultural, economic, gender and generational differences. Many of these subjects do not refer to public or private drug addiction services, either because they do not consider themselves as drug addicts, or because they think that such services are incapable of responding to their needs. This is a peculiar population, very hard to single out and study, with a consolidated habit of covert consumption in order to avoid legal problems, stigmas or labels, whose problems only emerge in the presence of traumatic events.

These subjects, who have been termed "socially integrated consumers" (Prinzleve et al., 2004; Van der Poel et al., 2009), have a medium-high education level and a normal standard of living; they often live with their family and enjoy a high subjective level of psycho-physical well-being. Their professional situation is apparently stable, they have medium-high financial resources at their disposal, mainly use drugs in recreational contexts and have a good understanding of the market. Further distinctive traits are a structured daily life, stable living conditions, legal means of support and the consumption of substances during their free time, outside of daily commitments. In spite of a long history of consumption, their social position does not seem to have been compromised by it or by the effects of the substances.

Poor drug addicts – In literature a bracket of marginal consumers has been identified, who are described as subjects who frequently use heroin/cocaine/amphetamines, with a low education level and legal problems. Most of them has no fixed abode and is unemployed, and their income largely comes from illegal sources. As to their specific substances of use, they consume cocaine by intravenous injection or crack cocaine in combination with opioids (Eisenbach et al., 2010; Prinzleve et al., 2004; Leri et al., 2003).

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In our study, in this particular social bracket (characterised by a high risk of death from overdose), we have observed an increased presence of many non-natives or public drug-addiction service users or ex-users. The delicate economic phase we are going through and the peculiar economic traits – briefly definable as "poverty" –, which characterise all different subjects, lead us to consider the definition of "poor drug addicts" as more appropriate. In fact, differently from the marginal subjects, who partly choose their peculiar life-style, they are mainly affected by the economic consequences of a drug addiction they can no longer afford.

The market – The main characteristic of the illegal substances' market, where products of different sorts and qualities are available, is that of not having inward barriers, in order to not hinder possible new entrepreneurs. In such a market, high-quality substances tend to disappear and only the poorest ones remain. Purchasers cannot assess the real quality of the products at the moment of buying, and dealers do not have reliable information on what they are selling, because they in turn have bought the products form higher level dealers. The price is determined by the quantities purchased and by the quality of the substances, but the consumers hardly know the real composition of the products, since they have unreliable information at their disposal.

The economic crisis – Recession may have consequences also on factors that can in turn influence the use of illegal substances, such as the number of socially marginalised people or a higher availability of drugs. Moreover, a deep and long-lasting crisis might imply drastic cuts, both in prevention and treatment strategies and in the fight against drugs. All of this would have a negative impact on the number of consumers.

If the price of the substances and people's income decrease because of the crisis, this will produce consequences on the number of consumers and on the frequency of consumption.

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Given the addiction-inducing effect of many substances, the reaction to price fluctuations may be asymmetric, and problematic consumers may be more deeply influenced by a decrease of prices than by their increase. It must also be noted that some administration modes are more expensive than others, and the price changes may have consequences also from this point of view: heroin addicts, for instance, declare that they need three times as big an amount when they smoke the substance as that which they need when they inject it, in order to obtain the same effect.

However, it must be specified that consumption rates may vary independently from the economic cycles: the choice of using the substances derives also from other factors that are hard to to predict and control, like for instance trends and particular cultures (Bretteville-Jensen, 2011).

Risks – It is very important to understand the social mechanism in which specific damages are attributed, where only the immediate effects are assessed and, due to lack of information, future problems are underestimated. Among those who use psychoactive substances, we can single out different consumption styles, with which different behaviours and risks may possibly be associated. In fact, many consume drugs in an irregular or occasional way, and many others try them out of curiosity and then quit. Extended consumption – which means: daily or almost daily – is different, and may result in a chronic use. Addiction, instead, accompanied by withdrawal symptoms, emerges after periods of uninterrupted consumption of high dosages or in relation to long-lasting consumption.

Problems related to irregular consumption may be associated with inexperience, the use of substances whose effects are unknown, the concurrent use of other drugs or alcohol, road accidents, psychical problems, cardiovascular problems, economic

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difficulties and overdoses. As far as problematic consumption is concerned, the risk emerges of a future addiction, as well as of health problems, relevant economic difficulties, hospitalizations, overdoses and problems with justice. This typology of consumers, mainly associated with cocaine and with the combined use of more substances, is growing enormously and is emphasized by the data related to the increased amount of ED accesses, as well as of hospitalizations, law enforcement agents' interventions, private and public drug addiction service users, inmates and drug requisitions. One of the main problems for illegal substance consumers, anyway, remains that of their limited knowledge of the product's composition, at the expense of the possibility of predicting its effects, both in case of sophistication and in presence of a higher or lower percentage of active principle.

Medicalisation – Many subjects use (both legal and illegal) psychoactive substances in order to reduce or compensate for some physical or psychic symptoms within a more or less aware self-medication process. Medicalisation is the locution that refers to a development of medical lexicon in defining a problem that had previously been considered as a form of deviance (Gabe et al., 2009). While the main protagonists emerging from the first studies on medicalisation are physicians and health professionals in general, the conceptualisation process has been gradual and complex, and has been largely influenced by social movements, single patients and ill people associations. According to some authors, a medicalisation process on cannabis is ongoing as a main consequence of the very consumers' pressure, since they no longer distinguish between recreational and medical uses (Pedersen et al., 2012).

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