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Original article

HCV infection and drug use in Italian detainees: results of validation of EQDP (European Questionnaire on Drug Use in Prison)

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Summary. *Purpose:* The aim of this paper is to describe the results of a survey conducted in Italy amongst detainees by administering a specific questionnaire (EQDP, European Questionnaire on Drug Use in Prison), in order to investigate drug use in prison, any sharing of used needles and, lastly, the degree of self-awareness regarding health (more specifically, in terms of HIV, HBV and HCV infection). *Structure of the article:* The article is split into three parts. The first provides an overview of the methodological guidelines for the EQDP, which were issued in March 2017 by the European Monitoring Centre for Drugs and Drug Addiction. The second describes the structure of the EQDP questionnaire (Italian version). The third provides the results of a survey conducted in Italy using this questionnaire and the health-related implications for the prison community, in particular regarding HCV, HIV and HBV. *Results:* The data were collected by the self-administration of the questionnaire to groups of a sample consisting of 40 male detainees under in normal prisons. In this type of custody, fewer subjects were substance abusers during previous prison terms than amongst subjects in open prisons. The most common forms of dependence (tobacco, alcohol, THC, cocaine, psychostimulants, hallucinogens, opioids, sedatives) detected were significantly different between the two types of imprisonment and they were easier to identify in the open-prison system. The analysis of the state of health with regard to the above viruses demonstrated that, in open-prison conditions, a higher percentage of subjects have been tested for HIV, HBV and HCV, whereas detainees in normal prison conditions were almost all unaware of their infection status and had a poorer awareness of their health in general. *Conclusions:* Health status (HBV, HCV, HIV) is not declared amongst normal detainees, who are less aware of their health conditions and receive less risk-reduction intervention. Amongst open-prison detainees, however, all substance users are subject to risk reduction interventions, which are efficacious in improving self-awareness in terms of a greater use of blood tests and treatments for infectious diseases. (www.actabiomedica.it)

Key words: prison, HCV, HIV, HBV, risk reduction, drug addiction

Introduction

Hepatitis C virus (HCV) infection is an important cause of liver disease worldwide. When untreated, chronic HCV infection progresses to cirrhosis, end-stage liver disease (ESLD) and hepatocellular carcinoma (1-3). The incidence of HCV infection amongst prisoners is many times greater than in the general population: of the more than 11 million detainees around the world at any one time (4), it is estimated that between 3% and 38% have been exposed to HCV, with estimates varying according to the geographic area and the prevalence of people who inject drugs (5). Previous specific investigations conducted on the prison

system, in particular show a sero-prevalence for HCV that ranges from 16% to 42% in the United States (6), from 30% to 50% in European countries (7) and from 31% to 38% amongst detainees in Italian prisons (8,9). HCV infection has a significant importance in mainland Europe: indeed, due to the high prison-population turnover rate, it is estimated that in the 53 countries of Europe there are approximately 6 million detainees in any one year (10). Modelling studies have also confirmed the negative impact of imprisonment on the perpetuation of the epidemic spread of HCV infection (11), and estimates regarding HCV infection amongst detainees with a history of injected drug use indicate a high incidence, equal to 16.4 per 100 person-years (12,13). Nevertheless, routine HCV testing in detention centres is still extremely limited (14,15). Dealing with epidemic HCV infection amongst detainees is therefore an essential component of global response (16). Experts encourage what is known as the "micro-elimination" of HCV, which represents a pragmatic approach for achieving eradication targets in specific populations, in which treatment intervention can be performed more quickly and more efficaciously using targeted methods (17). With the introduction of highly efficacious short-term direct-acting antiviral (DAA) therapy, a 90% reduction in HCV infection amongst detainees by 2030 is deemed a realistic goal (3,18), especially when this treatment is combined with opioid replacement therapy directly in the prison setting (19).

This high prevalence of HCV amongst detainees is the consequence of the forced concentration of high-risk individuals in the penitentiary setting, especially drug addicts and other people who inject drugs (PWID), who represent a significant part of the prison population (20,21). The risk of infection further persists during incarceration, as the prison setting amplifies the adverse conditions for health caused by overcrowding, the inadequacy of the facilities and frequent lack of access to health services (22,23), as well as widespread at-risk behaviour, such as the sharing of syringes and other sharp objects, tattooing and unprotected sex amongst individuals of the same gender (24-26). High-risk behaviour also increases not only the likelihood of catching but also that of spreading HCV – and other sexually-transmitted diseases – on a global level: many exposed patients, although they spend periods in the prison *microenvironment* in which the infection can be detected and treated, re-enter society after their release and are once again at risk of further re-exposure (Figure 1). However, if during their detention they receive treatment for their infection, it is possible that they may constitute less of a risk for others once they are in the *macroenvironment* outside of prison (27).

The prison microenvironment is considered a promising setting for intervention for the treatment of blood-borne disease, since this population presents a high disease prevalence, commonly practices at-risk behaviour and could be readily accessible for testing and treatment. Prisons are a particularly interesting microenvironment for the treatment of HCV, primarily because oral DAA treatment regimens currently require just 8-12 weeks of treatment to achieve a cure (27). It has been demonstrated that the DAA therapy response rates amongst detainees are similar to those achieved amongst ambulatory patients, despite the differences in terms of age, sex and treatment experience, with sustained virologic response at 12 weeks (SVR12) observed in over 95% of patients (28).

Furthermore, the evidence regarding the efforts made to eradicate human immunodeficiency virus (HIV) in the prison system have shown that it is possible to start treatment in these high-risk microenvironments, and that by succeeding in associating patients with care-providers even after their release from prison, it is possible to improve the overall burden of the disease and reduce its transmission and complications (29). Although the validity of this approach has not been proven yet for HCV, on these grounds, it can be postulated that prison could also be the ideal place for identifying, treating and, ultimately, eradicating HCV infection.

Consequently, HIV, HBV and HCV screening should be offered to all detainees when they enter prison. In actual fact, due to a complex series of local and national organisational flaws, prisoners are not always tested for these viruses. The available data on the treatment of chronic hepatitis C in prisons are limited to a few observational studies (30-32), whereas in Italy a number of small case series have been published on this specific topic (33). Generally speaking, it has been

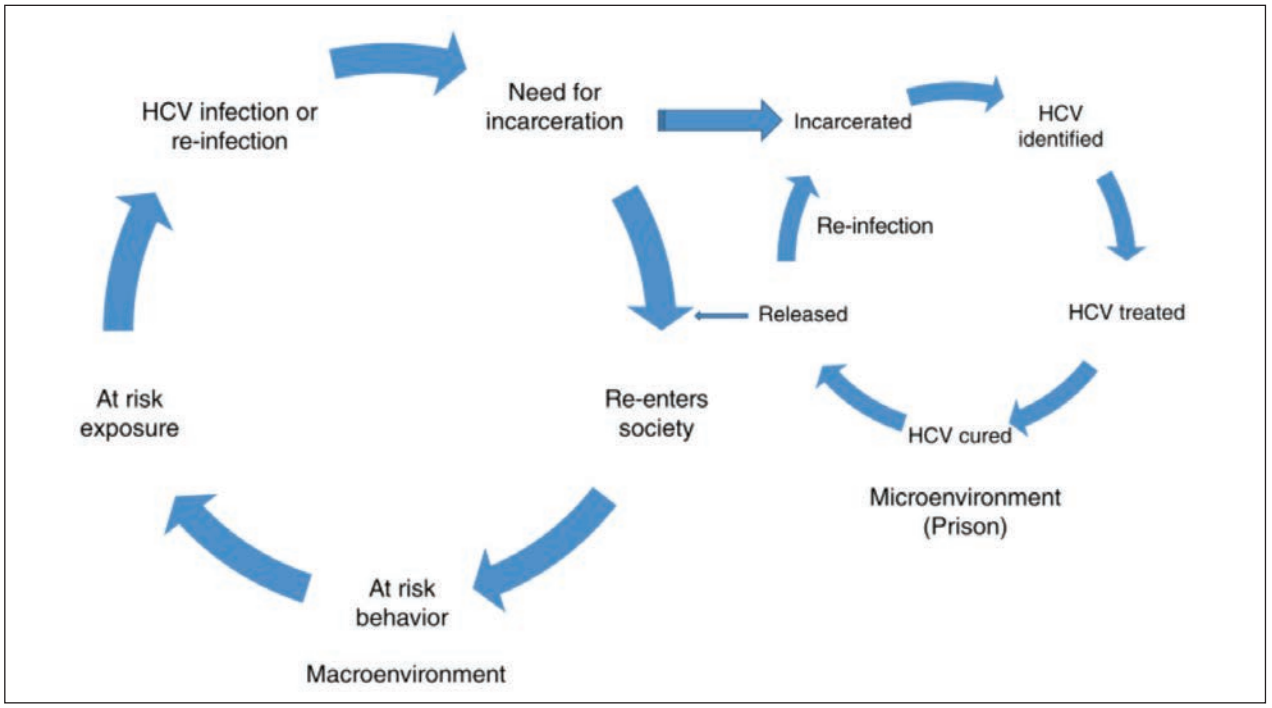

Figure 1. The HCV infection and reinfection "cycle" inside prison (microenvironment) and outside prison (macroenvironment). *(From: Redman JS, Sterling RK. Treating HCV in a Captive Audience: Eradication Efforts in the Prison Microenvironment. Am J Gastroenterol 2018 Jul 24. Epub ahead of print)*

observed that a minority of detainees with hepatitis C are able to complete a cycle of treatment, due to the patient's early release, the onset of side effects or comorbidities restricting access to treatment (31,32).

Given the considerable importance of this issue, a number of different national authorities have published guidelines recommending the screening of all detainees for blood-borne diseases when they enter prison. The Italian Ministry of Health Decree of 21 April 2000, which was issued to protect health in detention facilities (34), recommended not only testing and treating all infections associated with injected drug use, but also promoting programmes in order to improve detainees' awareness regarding preventative measures and treatment needs.

A correct implementation of initiatives to promote the treatment of HCV, HIV, HBV and drug addiction in penitentiary settings therefore requires the identification of efficacious and individualised approaches to service provision (35,36). In order to achieve this, it is necessary that habits regarding substance use and abuse, exposure to at-risk behaviour and the level of health awareness be identified and assessed in the prison setting, in order to facilitate the creation of efficacious local, regional and national intervention, in order to contribute to improving treatment coverage.

The data obtained during our previous pilot survey shows that there is a lack of awareness by users and health services with regard to both HCV screening and at-risk behaviour. In this original contribution, we make available the first Italian data describing the situation in the penitentiary system, as reported directly by the prisoners. In order to do so, we used - and validated for the first time in Italy - the EQDP (European Questionnaire on Drug Use among Prisoners), a tool devised to investigate substance use in detention centres, the possible sharing of used syringes and the degree of self-awareness regarding health, in order to verify in a sample of the prison population, the assessment of HCV and other screened diseases and the assessment of at-risk behaviour, considering both the perception of the problem and the risk factors for infection and spread.

Methods

Methodological guidelines concerning use of the EQDP

The European Questionnaire on Drug Use among Prisoners (EQDP) (original English version available from: www.emcdda.europa.eu/publications/technical-reports/european-questionnaire-drug-use-among-prisoners-eqdp_en) is the result of several years' work in the relationship between substance use and the penitentiary setting, and includes the consensus on a methodological framework and on the monitoring of drugs in prisons in Europe, the analysis of existing questionnaires and a discussion amongst high-level experts from the different European countries and international organisations. The proposed questionnaire represents a minimum essential dataset that could be used in all European countries, in order to guarantee harmonisation and comparisons. Each country could also expand its survey with supplementary items, in order to satisfy national or local information needs.

The questionnaire is completed by methodological guidelines for data collection and reporting. The methodological guidelines aim to guarantee high data quality and comparability between countries and to ensure that high ethical standards are applied. Again, according to national or local requirements, further, broader national guidelines and/or instructions may be produced, as well as rules for conducting the survey and manuals for work "in the field".

The methodological guidelines are split into two sections, those regarding the general principles and those regarding the guidelines themselves.

The first section lists some general principles that are common to all European countries and should be considered when organising and conducting a survey on substance use in prisons, in accordance with the aspects established in the methodological framework. More specifically, it lists a number of important aspects:

a) the information regarding substances and detainees must be collected with a public health perspective, rather than focussing on the control principle;

b) the purpose is to obtain information that can be used to improve the health of and social services for prisoners and therefore the physical, mental and social status of both detainees and the community as a whole.

c) survey planning and management must involve national institutions and the state agencies responsible for health on a nationwide level (Ministries of Health or Institutes for Public Health), for prison-related issues (penitentiary services or Ministries of Justice) and for policy regarding and the monitoring of substance use (drug addiction services, drug use commissions and national drug addiction centres or monitoring agencies);

d) the survey should be conducted by institutions that are independent of the prison service, and that have been recognised as applying rigorous scientific and professional standards;

e) all the fundamental requirements to be presented to the prison's administration department in order to obtain the complex authorisation required to come into contact with prisoners are listed;

f) European guidelines must be harmonised in order to prevent the proliferation of new pilot studies in the different countries and to find a minimum common core that also makes it possible to conduct studies comparing the situations in different countries;

g) the creation of guidelines must guarantee the best possible quality of the information collected and the application of a stringent ethical standard during its conduct, also through the direct involvement of prisoners, in order to increase the perception of the importance of the survey for their health, whilst also guaranteeing their complete anonymity;

h) the results of each survey should be "triangulated" with other potential sources of information, such as other studies, routinely-collected data or other unofficial sources;

i) the language and the terminology used in the questionnaire should consider the specific nature of the prison environment and should therefore aim to maximise comprehension and be suited to the level of education of the prisoners, who may speak a language that is not the official language of the country in which the penitentiary facility is located.

The second section, which includes the guidelines themselves, provides indications regarding the purposes of the survey, the methods and frequency of administration, the characteristics of the target population,

and practical aspects including prison access modalities, data collection methods and interview conduction. It also describes the purposes of the survey, which consist in improving knowledge regarding substance use amongst detainees, their health conditions and the consequences in terms of a better identification of the prisoners' mental health and social needs. This information may favour the appropriate development of social and public health services. It should also be noted that:

a) it is important to explain to the interviewees the purpose of the survey, so that the data can be collected and used to satisfy the general purposes of the research using the method established.

b) the methods used should be based on a transverse survey amongst prisoners regarding drug use both inside and out of prison, the health issues associated with substance use and the involvement of drug-addiction services;

c) the questionnaire should preferably be administered every two years, with a recommended maximum interval between two surveys of four years;

d) the survey's target population should include all the prisoners on the same day or same week in all penitentiary centres, preferably splitting them into categories based on their legal status or the place of detention;

e) the sampling method must be compatible with the targets set, by recruiting the subjects to be interviewed in a randomised manner in order to obtain a sample that is representative of the whole population registered at the prison, where appropriate possibly over-representing in the sample those groups of detainees with a certain state of health or social need;

f) although the interview must be conducted in a completely anonymous and confidential manner, it is essential for each participant to give both verbal and written consent to take part in the survey unless the questionnaire is completed by the respondent him/herself;

g) data quality control must be performed at a very early stage, in order to confirm the completeness and accuracy of the data.

As regards data collection, which is the crucial aspect for the reliability of the survey, the EQDP was designed for detainee self-administration, using either a computer-assisted personal interviewing (CAPI) system or more traditional paper questionnaires. Face-to-face interviews could be considered, although they cannot be conducted in certain countries, due to the regulations applied in some prisons. In connection with this, the methodological guidelines emphasise the fact that the type of data collection procedure chosen defines the quality and quantity of the survey results. Indeed, certain methods could cause unsurmountable problems, whereas others are ideal for their easy and efficacious resolution.

Structure of the EQDP

The EQDP consists of various parts. The first part regards information of a general nature, such as age, nationality, country of birth, judicial status, number of prison terms served and their extemporaneous and overall duration. The second part is dedicated to substance use both outside of and inside prison, and the detainee is asked to specify which substances he/she has used and for how long, as well as the age at which he/she used them for the first time. The next part collects information on the injecting of substances and other behaviour constituting a risk for health (sharing of needles and syringes for the injection of substances, non-professional tattoos), through to, in the fourth and fifth parts, details regarding the detainee's health status and the use of drug addiction services, by investigating HIV, HBV and HCV infection, establishing whether blood tests have been performed for these viruses, infection awareness and any treatment received in- and outside of prison. At the end of the questionnaire, the detainee is asked to declare the presence of any mental health issues or prior overdose episodes. The full Italian translation of the EQDP is provided in the supplementary materials available online.

Results

This experience is based on the data collected by the Penitentiary Health Unit of Padua Local Health Authority no. 16, following the administration of the EQDP to 2 groups of male detainees in normal prisons (November 2016) or, in a previous survey, subject

to detention in open prisons (April 2016). In the survey conducted on detainees subject to normal incarceration, which was self-administered to a group of 40 prisoners in November 2016, some of the prisoners were substance users (who therefore constituted the percentage of users out of the whole detainee population) and were being treated for addiction disorder. In the survey conducted amongst open-prison detainees, which was administered in face-to-face (F2F) interviews in April 2016, all the detainees were known to be substance users, who had entered the open-prison scheme voluntarily and who were receiving more intensive addiction disorder treatment.

The average age of the normal detainees was 34.0±10.3 years. The breakdown of the age brackets in the two groups (normal incarceration vs open-prison) is shown in Figure 2. Data regarding the prisoners' nationality was available for 38 subjects. 14 (36.8%) were Italian, and 24 (63.2%) were foreign nationals (9 from Eastern Europe, 12 from Northern African countries and 3 from other countries). It was possible to ascertain the judicial status of 35 patients: 16 (45.7%) were awaiting trial; 2 (5.7%) had already being tried and were awaiting an appeal, and 17 (48.6%) had been sentenced. Data regarding the duration of incarceration at the time of the survey were obtained for 32 subjects. Of these, 14 (35.0%) had been in prison for <6 months; 13 (32.5%) from 6 months to 1 year; 8 (20.0%) between 1 and 5 years; and 2 (5.0%) longer than 5 years. Two patients (7.5%) did not specify how long they had been detained for.

As regards substance use, the illegal substance most commonly used during the individual's lifetime, the previous year and the 30 days prior to incarceration was cocaine. During imprisonment, the use of illegal substances is around 20%. The most commonly used substances were cannabis, opioids and cocaine. The declared lower consumption of opioids was lower amongst normal detainees than those in open prisons. Furthermore, fewer normal detainees had used abuse substances during prior imprisonment than those in open prisons. Opioid consumption was lower both outside the prison and during incarceration, whereas for cocaine and THC, external use was intense but that inside prison was less so, showing a higher risk of use in prison amongst subjects with overt and recognised addiction problems.

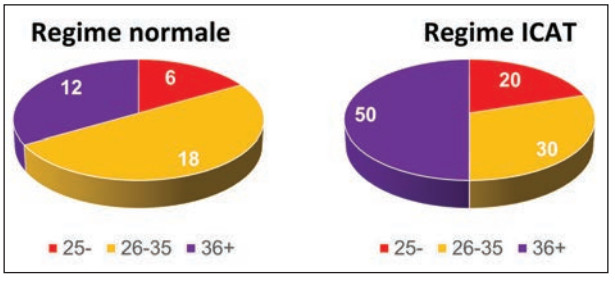

Figure 2. Distribution of the age brackets involved in the survey, broken down according to type of imprisonment.

History of tobacco consumption. The tobacco consumption rate was 82.1% amongst normal detainees and very similar for open-prison detainees (82.5%). Use inside the prison was seen to be considerably higher amongst normal prisoners than those in open prisons, for both the current and previous incarcerations (42.5% and 67.5% vs 20.0% and 5.0%, respectively). In addition, almost half stated they had smoked tobacco in the month prior to incarceration, for both normal and open-prison detainees (48.7% and 42.5%, respectively) (Figure 3).

History of alcohol consumption. The alcohol consumption rate was seen to be 74.4% amongst normal prisoners and very similar for open-prison detainees (77.5%). None of the prisoners said they had consumed alcohol in the current place of imprisonment amongst normal detainees, versus 5.0% amongst those in open prisons, whereas a rate of 10% was declared for previous incarcerations (vs. 17.5% amongst those in open prisons). Consumption was higher during the month preceding imprisonment for both groups (41.0% and 37.5%) (Figure 4).

History of THC consumption 55.6% of normal detainees declared using THC at some point in their lifetime; this percentage was higher amongst individuals in open prisons (77.5%). Just 5% of normal detainees said they used this substance during their current prison sentence (12.5% for those in open prisons), compared to 17.5% during previous prison sentences (30.0% amongst those in open prisons); this figure is slightly lower than that declared for the month prior to incarceration (27.8%; 22. % in open prisons) (Figure 5).

History of cocaine consumption 69.2% of normal detainees declared using cocaine at some point in their

	% Normal regime	% ICAT
Lifetime	82,1%	82,5%
→ *Age at first usage*	*15,7 + 3,8 yrs*	
1 yr before imprisonment	51,3%	45,0%
30 dd before imprisonment	48,7%	42,5%
→ *Frequency of usage (mode)*	*20+ dd in 30 dd (70,0%)*	
Used inside prison	42,5%	20,0%
First usage inside prison	10,0% (12,5% of lifetime users)	
Used during current imprisonment	67,5%	5,0%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*20+ dd in 30 dd (63,0%)*	

Figure 3. Tobacco consumption rates amongst normal and open-prison detainees.

	% Normal regime	% ICAT
Lifetime	55,6%	77,5%
→ *Age at first usage*	*17,2+5,3 yrs*	
1 yr before imprisonment	41,7%	42,5%
30 dd before imprisonment	27,8%	22,5%
→ *Frequency of usage (mode)*	*20+ dd in 30 dd (29,4%)*	
Used inside prison	17,5%	30,0%
First usage inside prison	2,5% (5,0% of lifetime users)	
Used during current imprisonment	5,0%	12,5%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 5. THC consumption rates amongst normal and open-prison detainees.

life. This figure was significantly higher amongst those in open prisons and reached 87.5% (Figure 6). None of them used it during their current prison sentence (5.0% amongst those in open prisons), compared to 7.5% during previous periods in prison (25.0% amongst those in open prisons), and 41.0% in the month before imprisonment (50.0% amongst those in open prisons).

History of psychostimulant use: The use of psychostimulants amongst detainees was absent during both current and previous prison terms, with a usage rate at some point in life of 16.7% and in the month before imprisonment of 8.3%. Once again, use at some point in life was significantly higher amongst those in open prisons (47.5%) (Figure 7).

History of hallucinogen use 8.6% of normal detainees declared using hallucinogens at some point in their lives, whereas none said that they had used this type of substance whilst serving their current or previous prison sentences. Amongst open-prison detainees, the declared consumption of these substances at some

	% Normal regime	% ICAT
Lifetime	69,2%	87,5%
→ *Age at first usage*	*21,6+7,3 yrs*	
1 yr before imprisonment	53,8%	65,0%
30 dd before imprisonment	41,0%	50,0%
→ *Frequency of usage (mode)*	*20+ dd in 30 dd (25,0%)*	
Used inside prison	7,5%	25,0%
First usage inside prison	0,0% (0,0% of lifetime users)	
Used during current imprisonment	0,0%	5,0%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 6. Cocaine consumption rates amongst normal and open-prison detainees.

point in life is more than four times greater (37.5%) (Figure 8). Consumption was also low in the month prior to imprisonment in both groups (2.9% and 5.0% amongst normal and open-prison detainees, respectively).

History of opioid consumption. A quarter of all patients (25.0%) said they had used this kind of sub-

	% Normal regime	% ICAT
Lifetime	74,4%	77,5%
→ *Age at first usage*	*17,2+4,4 yrs*	
1 yr before imprisonment	56,4%	50,0%
30 dd before imprisonment	41,0%	37,5%
→ *Frequency of usage (mode)*	*20+ dd in 30 dd (37,8%)*	
Used inside prison	10,0%	17,5%
First usage inside prison	5,0% (6,9% of lifetime users)	
Used during current imprisonment	0,0%	5,0%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 4. Alcohol consumption rates amongst normal and open-prison detainees.

	% Normal regime	% ICAT
Lifetime	16,7%	47,5%
→ *Age at first usage*	*20,7+5,0 yrs (MDMA)*	
1 yr before imprisonment	11,1%	7,5%
30 dd before imprisonment	8,3%	2,5%
→ *Frequency of usage (mode)*	*n/a*	
Used inside prison	0,0%	5,0%
First usage inside prison	0,0% (0,0% of lifetime users)	
Used during current imprisonment	0,0%	0,0%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 7. Stimulant consumption rates amongst normal and open-prison detainees.

stance at some point in their life; this rate was significantly lower than amongst open-prison detainees (57.5%). 16.7% of normal detainees (22.5% of those in an open prison) used opioids in the month prior to their imprisonment, and the usage rate was identical for the current and previous prison terms (7.5% for both). The rate for previous imprisonment was higher for those in open prisons (27.5% vs 7.5%) (Figure 9).

History of sedative use. Declared use at some point in life by normal detainees is fairly low (8.6%), whereas it is higher for detainees in open prisons (25%) (Figure 10). The usage rate for the current and previous prison terms is the same (2.5%; 2.5% and 5.0% in open-prison detainees, respectively). Use during the previous month is slightly higher (5.7%; 7.5% in the open-prison system).

Figure 11 summarises the consumption rates for the various substances, for some point during life, prior to imprisonment and during imprisonment, for normal and open-prison detainees. The figures comparing normal detainees with those in open prisons with regard to use of abuse substances at some point in life are included in the supplementary online material.

	% Normal regime	ICAT
Lifetime	8,6%	37,5%
→ *Age at first usage*	*18,0+0,0 yrs (mushrooms)*	
1 yr before imprisonment	5,8%	7,5%
30 dd before imprisonment	2,9%	5,0%
→ *Frequency of usage (mode)*	*n/a*	
Used inside prison	0,0%	2,5%
First usage inside prison	0,0% (0,0% of lifetime users)	
Used during current imprisonment	0,0%	0,0%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 8. Hallucinogen consumption rates amongst normal and open-prison detainees.

	% Normal regime	% ICAT
Lifetime	25,0%	57,5%
→ *Age at first usage*	*26,5+8,2 yrs*	
1 yr before imprisonment	19,5%	27,5%
30 dd before imprisonment	16,7%	22,5%
→ *Frequency of usage (mode)*	*1-3 dd in 30 dd (11,4%)*	
Used inside prison	7,5%	27,5%
First usage inside prison	2,5% (11,1% of lifetime users)	
Used during current imprisonment	7,5% (meth.)	7,5% (bupr.)
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 9. Opioid consumption rates amongst normal and open-prison detainees.

	% Normal regime	% ICAT
Lifetime	8,6%	25,0%
→ *Age at first usage*	*22,0+4,2 yrs (BDZ)*	
1 yr before imprisonment	5,7%	10,0%
30 dd before imprisonment	5,7%	7,5%
→ *Frequency of usage (mode)*	*n/a*	
Used inside prison	2,5%	5,0%
First usage inside prison	2,5% (33,3% of lifetime users)	
Used during current imprisonment	2,5%	2,5%
→ Used last 12 mm		
→ Used last 30 dd		
→ *Frequency of usage (mode)*	*n/a*	

Figure 10. Sedative consumption rates amongst normal and open-prison detainees.

An overall analysis of the data shows that substance use is more common amongst open-prison patients, i.e. those with a recognised and confirmed addiction. Indeed, these detainees often continue substance use during imprisonment, showing a composite abuse pattern (stimulants, hallucinogens, opioids), combined with benzodiazepine misuse. Conversely, amongst normal detainees, the high rate of substance use prior to imprisonment drops dramatically during incarceration and there is no evidence of specific composite abuse patterns or benzodiazepine misuse. However, normal detainees deserve special attention, because they often share needles or equipment, most likely because they are less aware of the risks, unlike those in open prisons, amongst whom the higher drug-injection rate is not associated with needle or syringe sharing (Figure 12). Therefore, in our opinion, the specific open prison population could require and benefit from special programmes and schemes, as it is at a greater risk of use during imprisonment, because they are individuals with confirmed and recognised problems.

The collection of data on health in terms of HIV, HBV and HCV revealed a number of differences between the testing performed outside of prison and during imprisonment. With regard to HIV, approximately half of all subjects had already had a test before their imprisonment, whereas during current prison term the percentage rose even further, to more than 2/3 of subjects. All subjects declared testing negative.

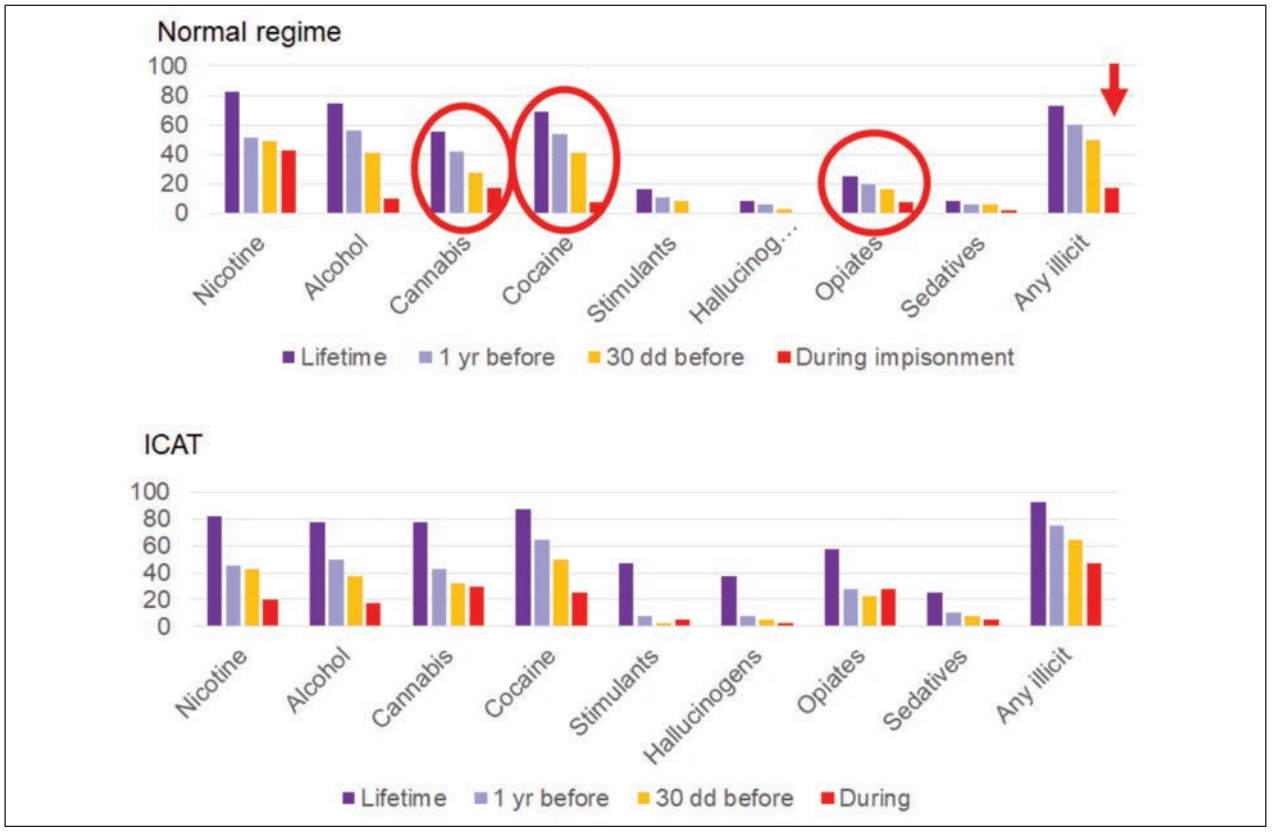

Figure 11. Consumption rates for the various substances, at some point during life, prior to imprisonment and during imprisonment, for normal and open-prison detainees.

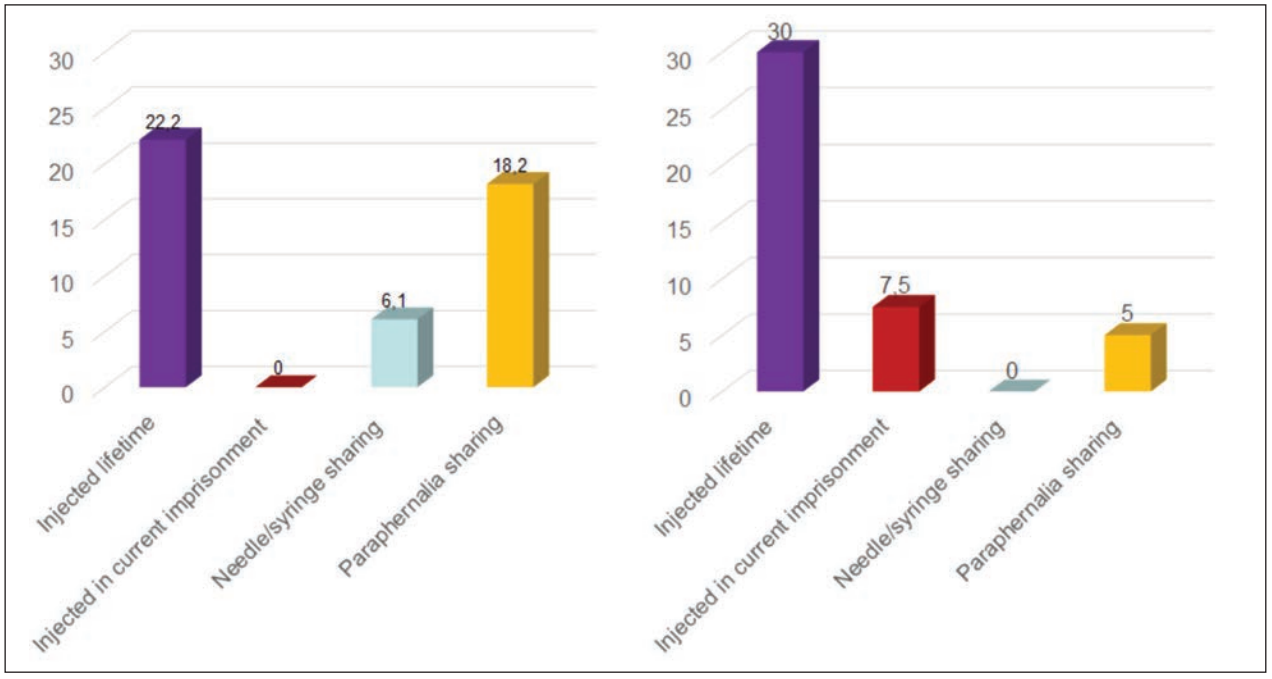

Figure 12. Differences between normal and open-prison detainees with regard to the various at-risk behaviours.

(Figure 13a). The rates for HBV testing out of prison were lower, and only approximately one third of subjects had been tested before imprisonment, whereas the rate for testing in prison was 50%. As for HIV infection, once again all subjects said they were negative for HBV. The vaccination rate is relatively low, as just 1 in 5 subjects said they had been vaccinated (Figure 13b). As far as HCV testing was concerned, just 30% said they had been tested outside of prison; this percentage rose to 60% during imprisonment. As for the other diseases, all subjects said they had tested negative (Figure 13c).

The analysis of the results showed that amongst detainees in open prisons, a higher percentage of subjects have been tested for HIV, HBV and HCV, as detainees under normal imprisonment conditions were almost all unaware of their infection status and less aware of their health conditions in general.

As regards mental/psychiatric health status, more than half had not had any psychiatric assessment during their current prison term and just 11% take medication for mental disorders. Conversely, almost 68% of open-prison detainees have had one, two or more psychiatric assessments during their current prison term, unlike the situation out of prison (30%). A far higher percentage also took medication for mental disorders during their current prison term (52.5%) (Figure 14).

Differences between normal and open-prison detainees were also observed with regard to access to the various social and health services during their current prison term. For instance, whereas all open-prison patients had a check-up upon arrival and received counselling, amongst normal detainees these were not guaranteed in approximately 15% and 30% of cases, respectively. Low rates were also observed for replacement therapy for opioid addiction and detoxification, which were provided in under 20% of cases of normal imprisonment and in under 30% of detainees in open prisons (Figure 15). The analysis of the data collected therefore showed a poor level of use of resources and facilities inside prison for normal detainees with regard to the main areas of care (counselling, psychiatric assessment, screening for infectious diseases). However, the different characteristics of the open-prison system make it easier for this type of detainee to use resources and facilities, although this does not always translate into a great attention with regard to their health, as demonstrated, for example, by the low HBV vaccination rate, despite the at-risk behaviour of this population (Figure 16).

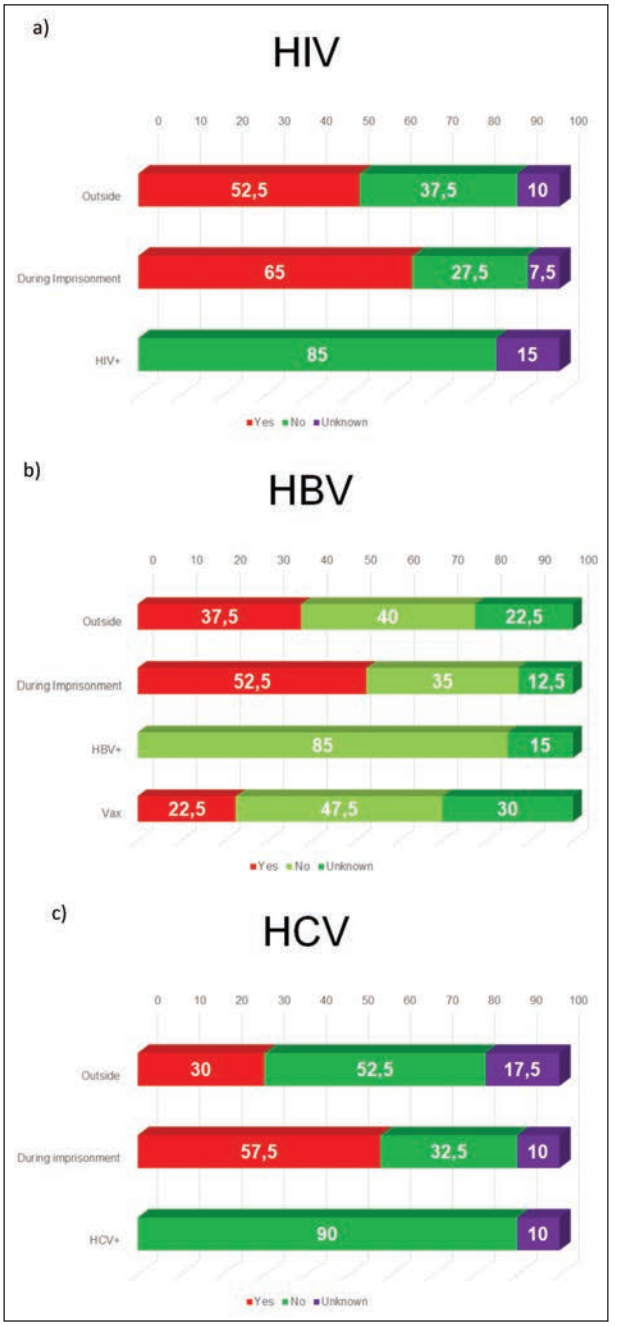

Figure 13. HIV, HBV and HVC screening rates outside of prison and during incarceration.

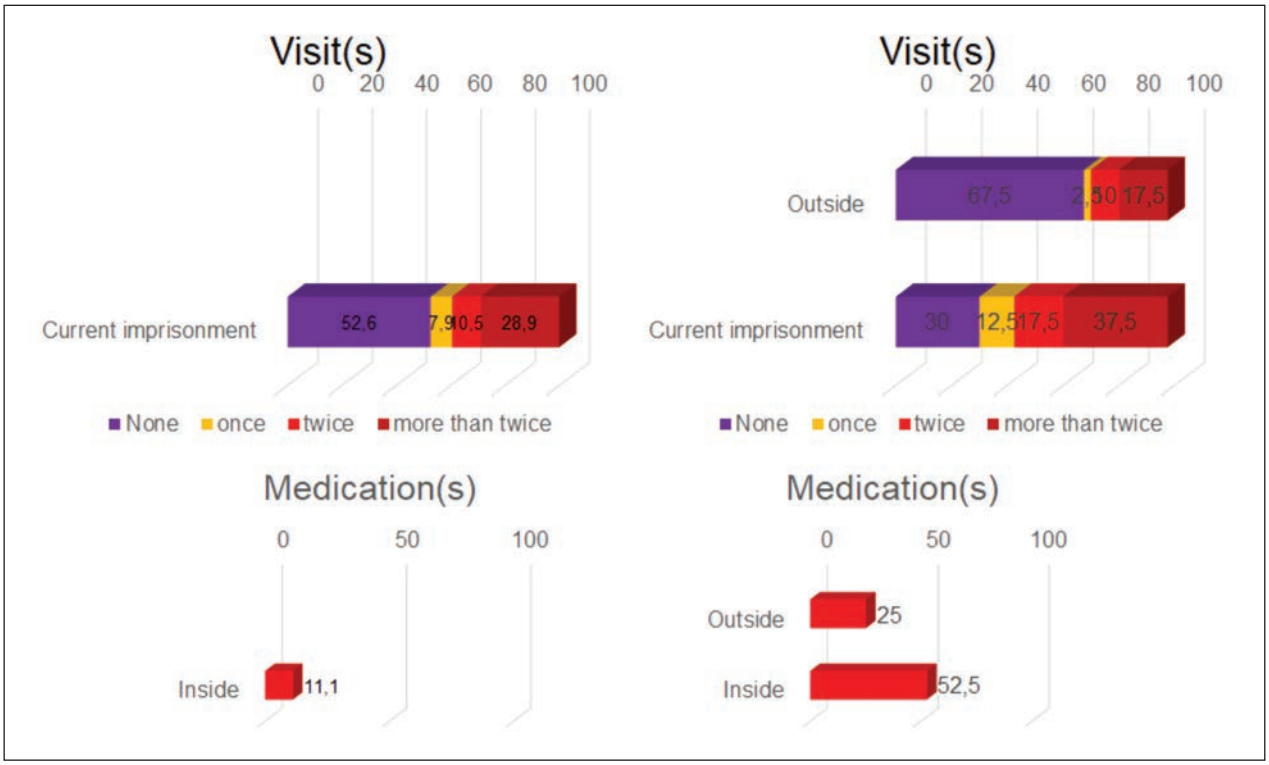

Figure 14. Psychiatric intervention outside of prison and during imprisonment, amongst normal and open-prison detainees.

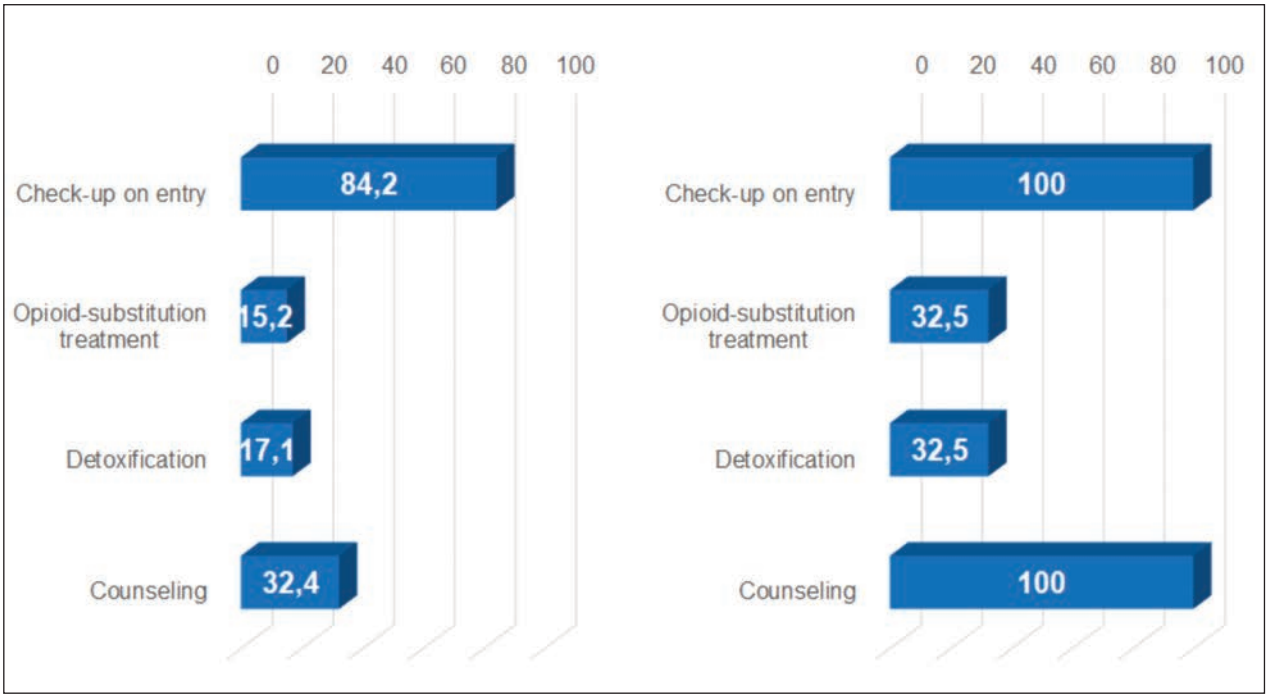

Figure 15. Access to social and healthcare services during imprisonment, amongst normal and open-prison detainees.

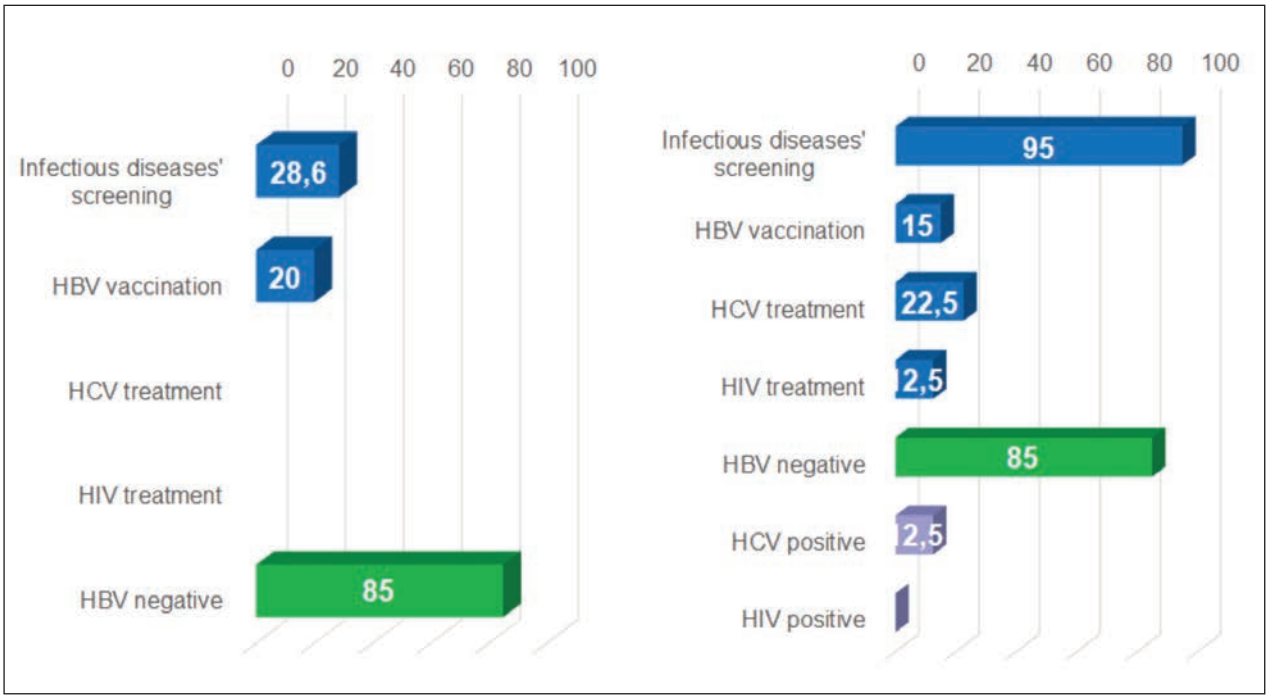

Figure 16. Access to infectious diseases screening services - including for HIV, HBV and HCV infection - during imprisonment, amongst normal and open-prison detainees.

Conclusions

The prison population represents a set of subjects in whom substance use constitutes one of the main health-related issues with regard to both frequency and severity. More specifically, infectious diseases, especially those that are sexually-transmitted or blood-borne, including HIV, HBV and HCV, are common amongst detainees, many of whom are arrested for criminal offences associated with substance use. The high risk of contracting these infections is directly related also to the poor hygiene conditions and inadequate healthcare provided in prison. Previous studies and surveys in this field have shown that the prison population is characterised by higher positivity rates for a number of infectious diseases, including HCV, due primarily to the presence of at-risk lifestyles associated with family, psychiatric and social problems existing prior to imprisonment, to which the problems that are characteristic of incarceration (tattooing, overcrowding, fighting, sexual promiscuity and syringe sharing) are then added.

Our survey, which was conducted using the specially-designed EQDP amongst detainees in two different types of imprisonment, the normal and open-prison systems, showed that in the former case health status is not declared by this group of detainees, which is less aware of their health and receives less intervention to mitigate risks. In the open-prison group, although the detainees say they are more aware of their health, many of them continue to use substances during their prison term, with higher substance use rates than amongst normal detainees. In addition, given the difficulties in obtaining sterile needles and syringes, the sharing of the equipment and tools using for injection increases the risk of infectious disease transmission. Consequently, this situation may constitute the opportunity to implement, amongst open-prison detainees, a series of risk-mitigation measures that are efficacious in improving self-awareness in terms of a greater use of blood tests and treatments for infectious diseases.

The Italian version of the EQDP was administered in two different ways to the two groups of prisoners: in

the normal detainee group it was self-administered by the prisoners, who answered the questions directly and in a confidential manner, whereas in the open-prison system it was administered by face-to-face interviews. Both approaches have advantages and disadvantages: indeed, questionnaire self-administration has advantages over F2F administration in terms of temporal efficiency and confidentiality, but can obtain less accurate answers and a significant amount of missing or inadequate information. Another possible hindrance to the use of the questionnaire is associated with the presence in Italy of a considerable number of foreign prisoners (mainly of North African, Albanian and Romanian), who represent one third of the prison population and whose understanding of questions in another language may be limited. For this reason, we have hypothesised two different options: 1) the creation of a special version for subjects who have been in prison for less than one year (or other period to be defined); 2) F2F administration, which could be useful also for illiterate prisoners.

In short, the results of our survey bring to light not only the inadequacies regarding the identification, control or awareness of diseases associated with the use of substances in prison, but also the need to pursue a number of goals for the future, which could include: extending screening to all prisoners with a history of substance use, regardless of the method of administration or severity of their dependence; targeted patient management; antiviral treatment and the implementation of harm-reduction policies at all stages; prevention activities both inside and outside of prison. This type of approach could be advantageous for both occasional users with mild/moderate dependence and in those with more severe addictions, thanks to the possibility of close-range prevention and treatment strategies that are, therefore, more efficacious and proactive.

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