


Prevalence of drug use before and during imprisonment in seven European countries (2014–2018)

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Abstract

Substance use is a global phenomenon that is particularly affecting the prison population. This study aimed to describe the prevalence of drug use among people in prison before and during incarceration in seven European countries and to compare it with the prevalence in the general population. Individual data collection was carried out between 2014 and 2018 with a model European Questionnaire on Drug Use among people in prison. A total of 12,918 people living in prison filled in the survey. People in prison report higher level of drug use when compared with the general population and the use of drug inside prison exist, although at lower levels when compared with pre-detention. Prisons can represent a point of access to engage individuals who use drugs in interventions that address drug use and risk factors related to both drug use and imprisonment.

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1 | INTRODUCTION

Data available on January 1, 2018, show that around 700,000 people were held in European prisons (Aebi & Tiago, 2019). However, the number of people who pass through prisons each year is considerably higher, because of the high turnover and recidivism rate. Despite the situation is not the same in all countries, there is overwhelming evidence that people who are incarcerated disproportionately experience complex, co-occurring health problems, including mental illness, cognitive disability, noncommunicable, infectious diseases and substance-use disorders. The poor health experienced by this population typically occurs in the context of entrenched socioeconomic disadvantage (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2022).

People living in prison (PLP), especially women, are substantially more likely to have used drugs in their lifetime, to use them regularly and to experience drug-related problems than the general population (Fazel et al., 2017). Data from Europe estimate the lifetime prevalence (LTP) of illicit drug use at prison reception to be 60% (29.9%–92.8%) (van de Baan et al., 2022). Furthermore, PLP also report a higher prevalence of drug use for heroin, cocaine and amphetamines (Dolan et al., 2016). Literature has also reported that a quite high proportion of people who use drugs, and in particular heroin users, start using drugs in prison (Boys et al., 2002; Bukten et al., 2020; Enkelmann et al., 2020).

However, data on the prevalence of drug use among PLP are scarce and, when available, they are often not comparable between countries (Aebi et al., 2015; Carpentier et al., 2012; Royuela et al., 2014), limiting any attempt to draw an international picture.

Although standard methodologies for data collection and monitoring have been established in Europe in the areas of drug use and drug-related problems in several settings and populations (Council of the European Union, 2001; Hartnoll, 2003), the same process has not been implemented in prison settings and populations (Griffiths et al., 2012; Mounteney et al., 2016). This is partly due to difficulties in conducting drug research and monitoring inside prisons (Carpentier et al., 2012), but also to the low priority that drug use among prison populations assumes in national or international political agendas (EMCDDA, 2012). However, more attention has been paid lately to data collection, research and monitoring, as well as health and social interventions targeting drug issues among the prison population (EMCDDA, 2022).

There is an urgent need to assess and monitor the scale of the phenomenon (General Secretariat of the Council (Council of the European Union), 2021; World Health Organization, 2019); even more so given the rapidly changing

drug markets inside and outside prison, including the development and spread of new psychoactive substances (NPS) also inside prisons (Comiskey et al., 2020; EMCDDA, 2018c). Ensuring this information is collected uniformly across European countries would support regional drug monitoring, facilitate the exchange of best practices and lessons learnt, and inform the development of responses to meet current and future challenges in this field. The availability of comparable data across countries can also support the definition of common European policy and action plans in the drug field, including in the prison setting.

The EMCDDA has developed efforts in this direction (Council of the European Union, 2006), through the definition of a common monitoring framework to monitor drugs and prisons in Europe (Council of the European Union, 2013; Ministero della Giustizia (Ministry of Justice), 2020). Since 2002, the EMCDDA has been collecting annual epidemiological data on the prevalence of drug use and drug injecting among PLP in an aggregated form from the 28 European Union (EU) Member States, Norway and Turkey (EU-30) (Montanari et al., 2017) (since 2021, the countries reporting to the EMCDDA are the 27 European Member States, Norway and Turkey). In 2012, a review of its 10 years of monitoring drug use prevalence and patterns of drug use among PLP in the European countries pointed to the need to define a common instrument to measure drug use and its consequences in European populations living in detention (Carpentier et al., 2012) and in 2014 an assessment of available questionnaires used in drugs and prison survey in Europe and beyond was conducted as a basis for developing a model questionnaire (EMCDDA, 2014). The latest three EU drug strategies (Council of the European Union, 2012, 2017; General Secretariat of the Council [Council of the European Union], 2021) confirmed the need to develop indicators to monitor drug use and drug-related interventions in prison in Europe.

Following these recommendations, the European Questionnaire on Drug Use among PLP (EQDP) was drafted in 2017 alongside methodological guidelines for conducting drug research in prison (Montanari et al., 2017). Updated in 2021, the EQDP includes a package comprising a short and long version of the survey and methodological guidelines (EMCDDA, 2021a, 2021b, 2021c).

Using data gathered through the EQDP, this study aims to (i) analyse the prevalence of drug use among PLP before and during imprisonment, and (ii) compare the LTP of substance use between PLP and people in the community.

2 | METHODS

2.1 | Prison population data

Between 2014 and 2018, surveys on substance use among PLP using the EQDP (whole or part of it) were conducted in seven European countries (Czechia, Latvia, Lithuania, Poland, Portugal, Slovenia and Spain). As described elsewhere (Montanari et al., 2017), the EQDP focuses on general information (socio-demographic, legal status); substance use outside and inside prison; and other related topics. Table 1 describes the general characteristics of the surveys as conducted in each of the seven countries. Study design and sampling methods differed by country (Table 1). Simple random sampling was used in Czechia and Lithuania based on the list of people in prison registered on a given day; random sampling stratified by sex and nationality was used in Portugal and Spain; and convenience sampling was used in Latvia (highest possible number of interviewees), Slovenia (self-nomination) and Poland (purposive sample combination of various types of units/prisons). In all countries, a self-administered questionnaire conducted in a group setting was used with the support of a trained assistant, except in Spain where personal face-to-face interviews were performed by a trained researcher. Poland only administered the questionnaire to males; Spain and Portugal did not collect information on drug use in prison and Latvia did not collect information on drug use outside prison.

TABLE 1 Study design, sampling methodology and final sample size by country.

	Czechia	Spain	Latvia	Portugal	Slovenia	Poland	Lithuania
Year of data collection	2018	2016	2018	2014	2015	2018	2017
No. prisoners/prisons in the country	20,171 PLP 35 prisons	60,172 PLP 82 prisons	2966 PLP 12 prisons	13,343 PLP 49 prisons	3905 PLP 13 prisons	72204 PLP 216 prisons	6699 PLP 11 prisons
Country incarceration rate (per 100,000 inhabitants)	209	133	195	135	68	190	232
Final sample size	1695 (8.4%) 35 prisons	5024 (8.4%) 71 prisons	1017 (34.3%) 9 prisons	2149 (16.1%) 47 prisons	688 (17.6%) 11 prisons	1251 (17.3%) 6 prisons	1094 (16.3%) 10 prisons
Inclusion criteria	All sentenced PLP; >17	All PLP speaking Spanish, Arabic or Romanian; >18	All sentenced PLP; >17	All sentenced PLP; >15	All sentenced PLP; >19	All sentenced PLP; >16	All PLP speaking Lithuanian; >15
Exclusion criteria	Individuals in the high security regime	Individuals in high security regime or in semi-freedom regime	Individuals who have not yet received a final court judgement	Special prison for law enforcement staff	Individuals who have not yet received a final court judgement	Individuals in high security regime	-
Sampling method	Random sampling	Stratified random sampling. Overrepresentation of women	All convicted persons — no separate sampling is created	Stratified random sampling	All convicted persons — no separate sampling is created.	Purposive sampling	Random sampling
Questionnaire administration	Pen and paper, self-administered. Conducted in a group setting	Personal face-to-face interview	Pen and paper, self-administered	Pen and paper self-administered. Conducted in a group setting	Pen and paper, self-administered. Conducted in a group setting	Pen and paper self-administered. Conducted in a group setting	Pen and paper, self-administered

2.2 | General population data

The LTP of drug use in the general population was sourced from EMCDDA and collected through the General Population Surveys (GPS) (EMCDDA, 2009). The GPS survey was addressed to people aged between 15 and 64 years old. Data included in the analysis from the GPS were based on the same year as the EQDP or, if not available, in the year preceding the EQDP.

2.3 | Data analysis

Data on the use of cannabis, cocaine, amphetamine, ecstasy, lysergide (LSD) and heroin were analysed both for PLP and for the general population. The LTP, the prevalence of drug use in the last 12 months before the current imprisonment and the prevalence of drug use during the current imprisonment were described.

Univariable country-level odds ratios (OR) and their 95% Cornfield exact confidence intervals (CIs) were calculated between the odds of LTP drug use in PLP and the general population. Univariable country-level risk ratios (RR) between the drug use in the current imprisonment and in the last 12 months outside prison before the current imprisonment were calculated. In the country where the information was available the RRs were calculated by gender.

2.4 | Ethical approval

Collecting data in prison settings is a sensitive issue and ethical principles should be carefully considered at every phase of the survey. The surveys conducted in the different countries were anonymous and respect confidentiality (EMCDDA, 2021b), following the EQDP methodological guidelines for conducting research in prison, in particular concerning the section on ethics. The country-specific authorization procedures necessary for the implementation of the research were carried out, ranging from the authorization request to the prison administration, to the approval of the research protocol by an ethics committee.

3 | RESULTS

Overall, a total of 12,918 PLP filled in the survey. The median age was 36 years (interquartile range: 29–45) and 89.4% were male. These demographic characteristics of the selected sample in each country can be found in Supporting Information: Table 1.

3.1 | The LTP of drug use among PLP and the general population

Figure 1 shows the LTP of drug use in PLP and the general population. The LTP of drug use was higher in PLP than in the general population for all the reported substances and all countries (Supporting Information: Table 2).

The OR between the LTP drug use in PLP and the LTP drug use in the general population ranged from 2.4 (Slovenia) to 15.5 (Latvia) for cannabis, from 10.8 (Slovenia) to 62.4 (Poland) for cocaine, from 6.6 (Spain) to 65.7 (Czechia) for amphetamine, from 6.3 (Slovenia) to 43.9 (Poland) for ecstasy, from 1.9 (Poland) to 32.2 (Portugal) for LSD and from 8.6 (Poland) to 296.9 (Latvia) for heroin (Figure 2).

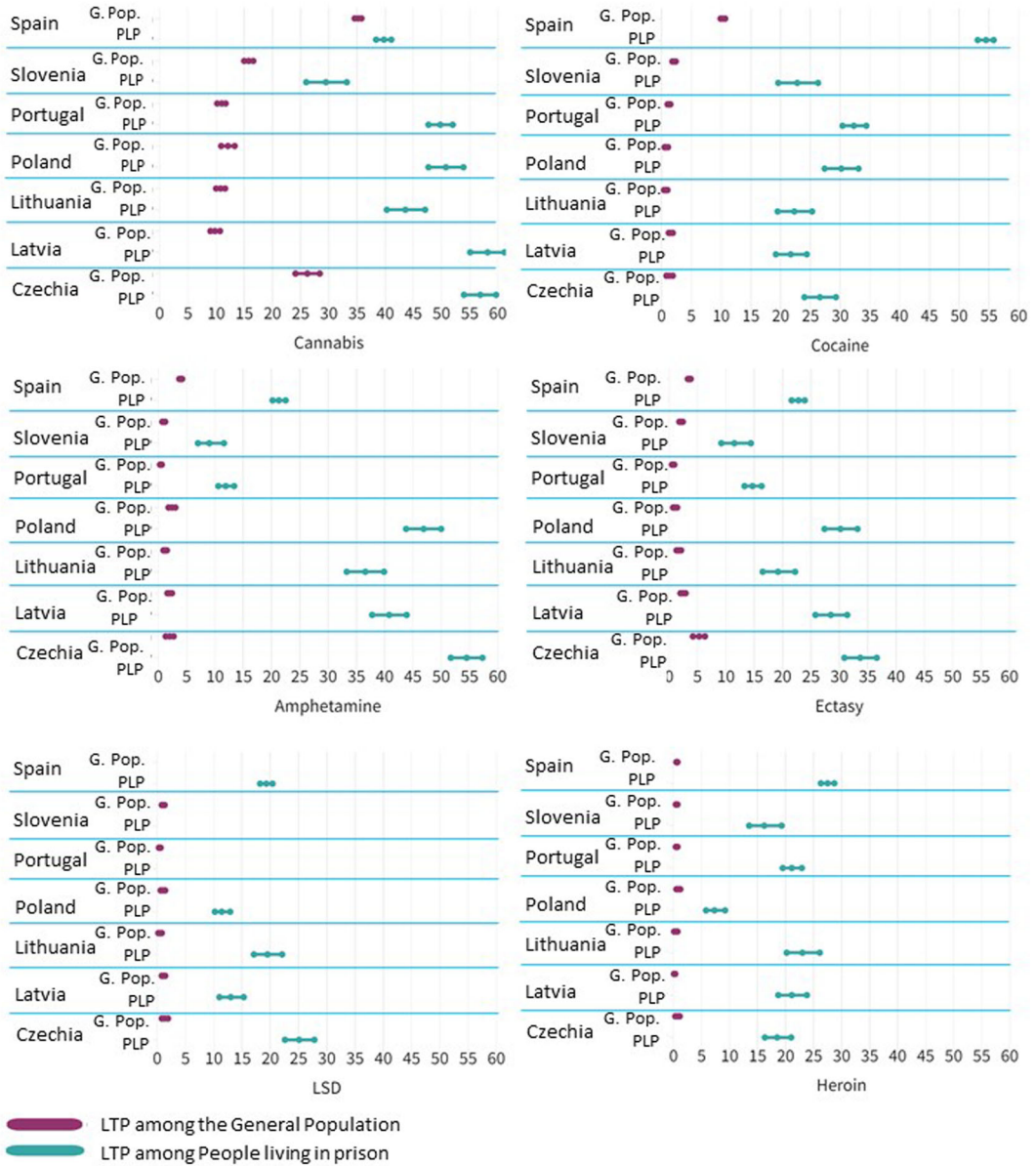


FIGURE 1 The lifetime prevalence (LTP) of drug use in people living in prison (PLP) and in the general population (G. Pop.).

3.2 | Prevalence of drug use outside and inside prison

The prevalence of drug use was higher during the 12 months before incarceration than during incarceration for all the drugs assessed in this analysis. However, for Slovenia and Lithuania, the CIs were overlapping.

Overall, there was a significant reduction in the reported risk of using drugs inside prison when compared with the risk of the last 12 months before the imprisonment, except for Slovenia and Lithuania. For Slovenia, there was not statistically significant reduction in the use of heroin, ecstasy and amphetamine, while for Lithuania, there was not statistically significant reduction in the use of heroin, LSD and ecstasy (Figure 3). Overall, the reduction of the

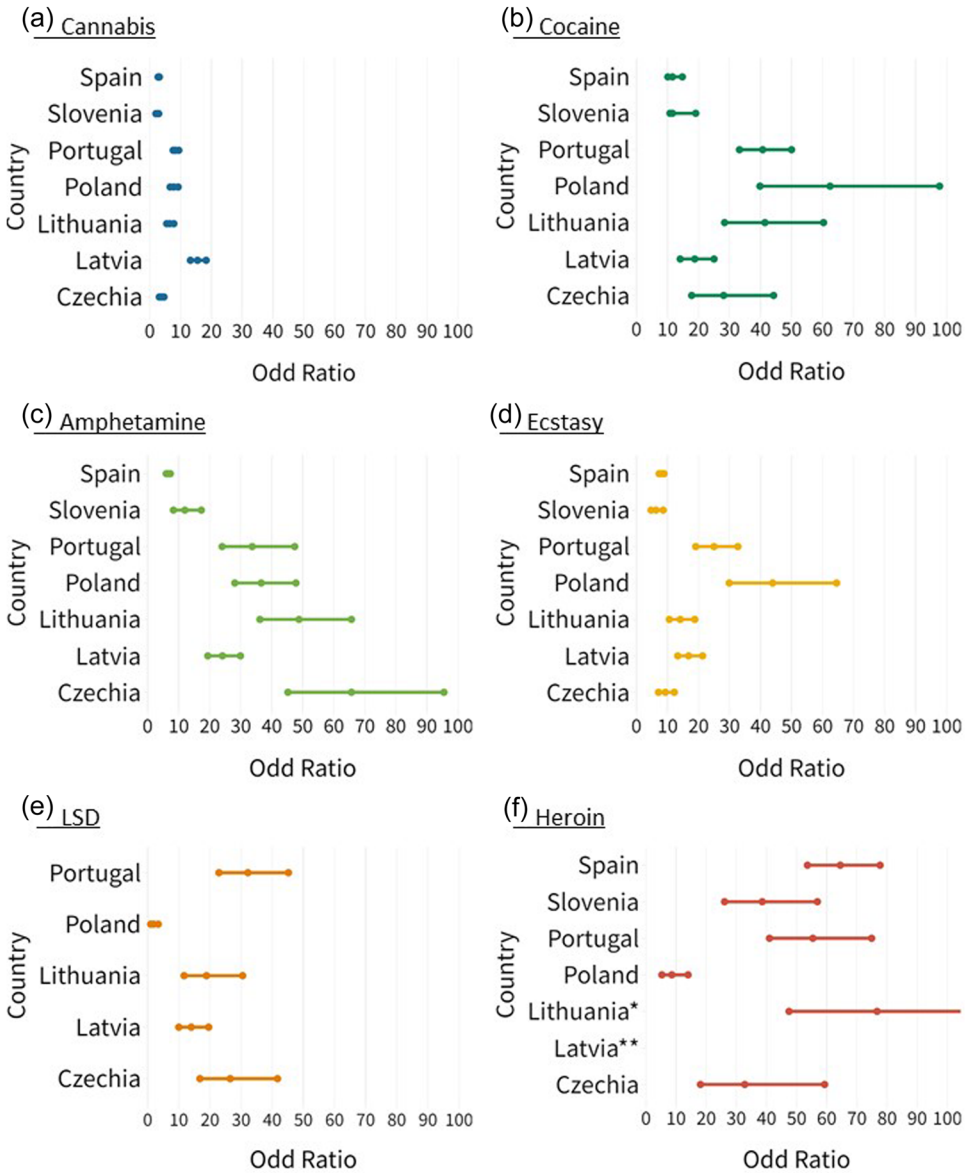


FIGURE 2 Odds ratio (OR) between the odds of lifetime prevalence (LTP) drug use in people living in prison (PLP) divided by the odds of LTP drug use in the general population. (a, cannabis; b, cocaine; c, amphetamine; d, ecstasy; e, LSD; f, heroin). *OR for Lithuania 76.6 (confidence interval [CI] 95%: 47.5–123.6); **OR for Latvia 296.9 (CI 95%: 125.1–704.7).

risk of using drug during imprisonment was higher in females than in males, although, given the small number of females in our sample, the CIs were wide.

3.3 | Sex differences in prevalence of drug use among PLP

The prevalence of drug use was mostly higher among males than females for different substances, countries, time span and both outside and inside prison. However, the prevalence of heroin use outside and inside

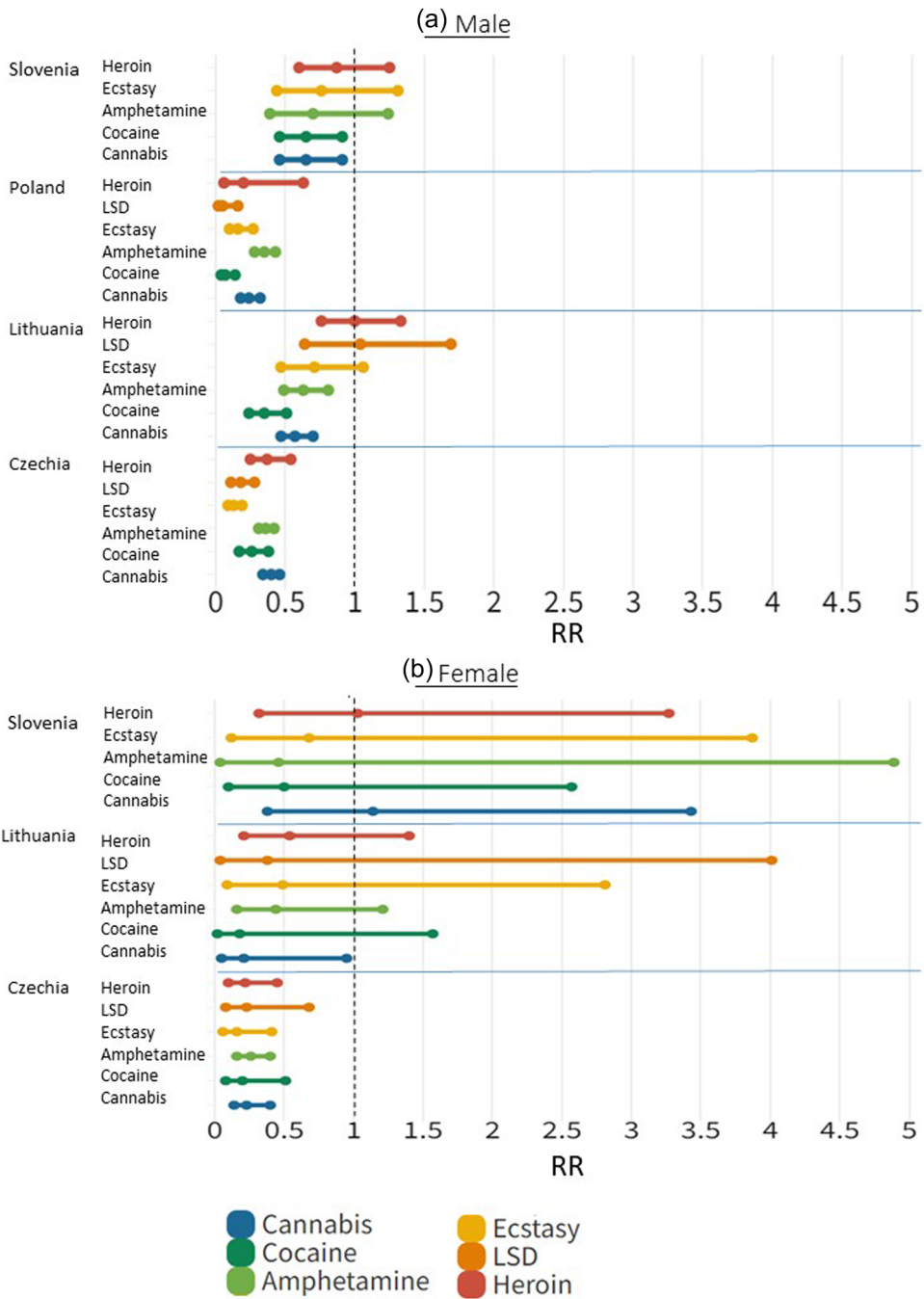


FIGURE 3 Risk ratio (RR) of using drugs inside prison compared with the risk of using drugs outside prison in the last 12 months before the imprisonment by country (a, male; b, female).

prison was higher among female than males in most countries (exception Portugal LTP drug use outside prison and except heroin outside and inside prison, and Czechia for most drugs (Figure 4 and Supporting Information: Tables 3 and 4).

4 | DISCUSSION

This study investigated the prevalence and patterns of substance use among PLP before and during imprisonment across seven European countries.

This research confirms the high prevalence of people in prison who have experienced drug use, especially when compared with the general population. Drugs, drug use and prison experiences are interlinked in various ways. First,

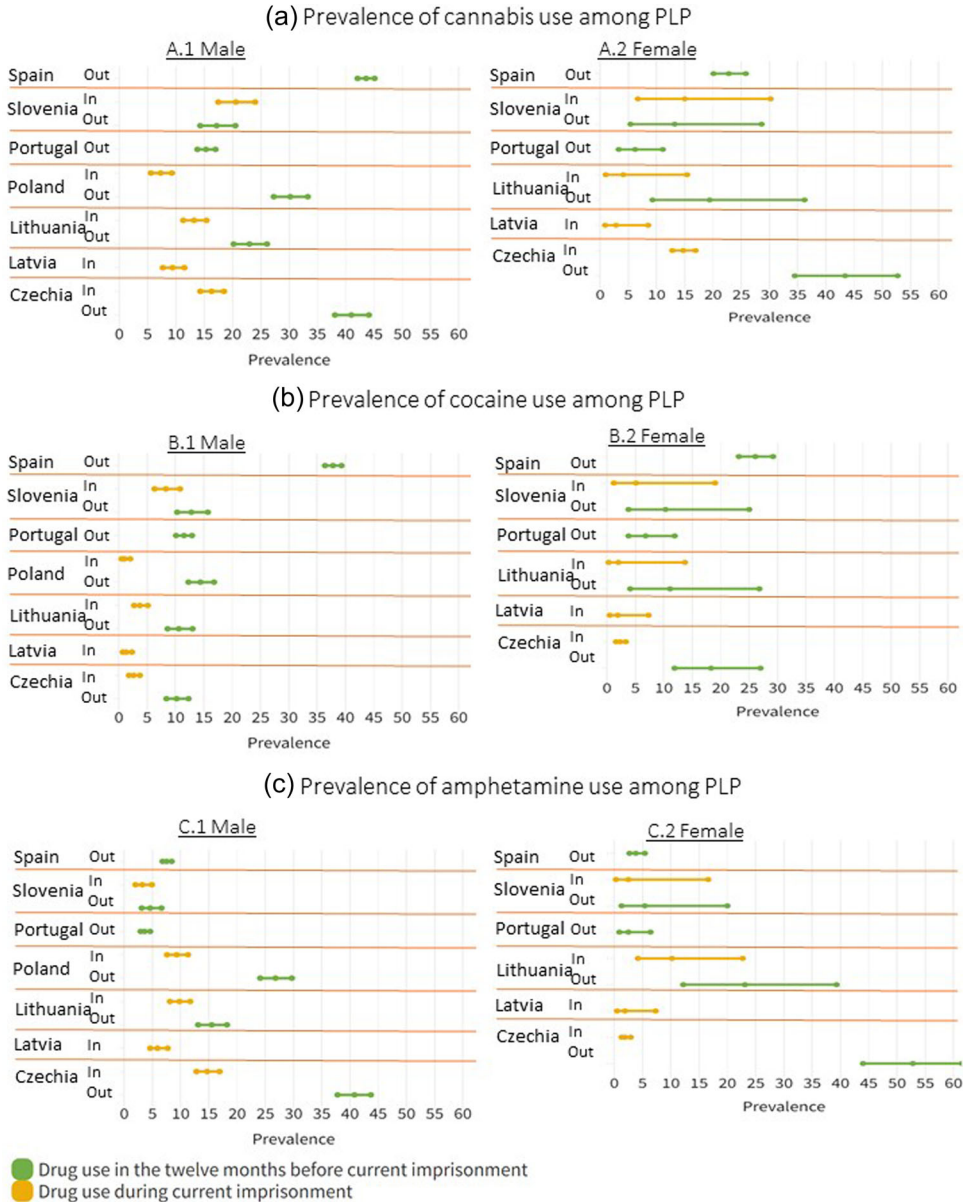


FIGURE 4 Prevalence and 95% confidence interval of drug use in the 12 months before current imprisonment and during current imprisonment. (a) Cannabis (A.1, Male PLP; A.2, Female PLP); (b) Cocaine (B.1, Male PLP; B.2, Female PLP); (c) Amphetamine (C.1, Male PLP; C.2, Female PLP); (d) Ecstasy (D.1, Male PLP; D.2, Female PLP); (e) LSD (E.1, Male PLP; E.2, Female PLP); (f) Heroin (F.1, Male PLP; F.2, Female PLP) by country, 2014–2018.

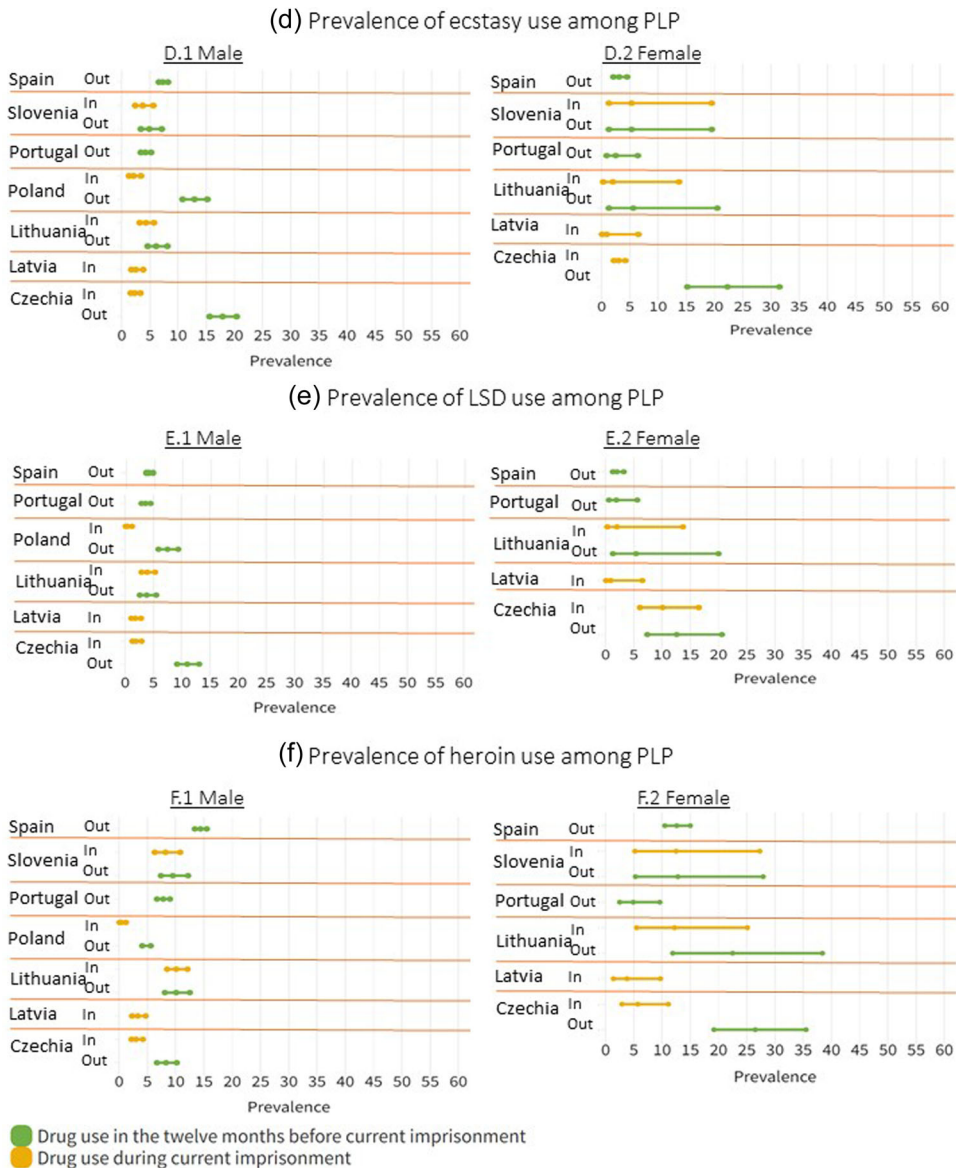


FIGURE 4 (Continued)

many people are in prison for committing drug law offences: on average 18% of people have received a final sentence for drug law offences in the EU, Turkey and Norway (Data 2018), including possession or supply of illicit drugs (EMCDDA, 2022). Second, a proportion of people who use drugs are in prison for crimes committed to support or fund their drug use (acquisitive crimes). Third, a proportion of people who use drugs are in prison for other types of crimes. This makes up a large group of people in prison with experience of drug use and sometimes problems related to their drug use. The prison and drugs interlink reflects how offending and drug use have common risk factors, such as social marginalization, economic deprivation, school dropout, unemployment, childhood neglect and abuse, and parents with histories of substance use or mental health disorders (EMCDDA, 2022). Although differences across countries exist, it is important to note that an excess of drug use compared to the general population exists in all countries and for all substances analysed.

An important data from this analysis is the profile of women in prison regarding their drug use. In Czechia and Latvia, the prevalence of drug use outside prison was higher among women for most substances as compared with men. The prevalence of substance use outside prison was higher among women than among men for heroin in all countries and for amphetamines in four countries (Czechia, Latvia, Lithuania and Slovenia) (Supporting Information: Table 2). Research on substance use among women in prison is uncommon, although available sources point to an increase in the last 10 years in the number of women imprisoned, particularly for drug law offences and especially outside Europe (Aebi & Delgrande, 2018; Sánchez et al., 2017). The reasons for the higher drug use prevalence in women than men is related to several factors. Women commit in general less crimes than men and the crimes they commit are nonviolent crimes, especially drug law offences (possession and trafficking) and property crimes to support their drug use. Worldwide the proportion of women in prison for drug-law offences is higher than that of men; in Europe, it ranges from 5% in Bulgaria to 40% in Spain (UNODC - United Nations Office on Drugs and Crime, 2018). Those women who commit crimes and end up in prison have a particularly problematic life history, including mental health and drug use problems. Women in prison have complex social and health profiles, as a large proportion has experienced multiple and repeated traumas since childhood in contexts of social disadvantage, including violence and sexual abuse (Fuentes, 2013; Van Den Bergh et al., 2011). Women living in prison have less access to healthcare services for their drug use and other health conditions, highlighting the need to develop gender-sensitive interventions in prisons (Kolind & Bjønness, 2017; Plugge et al., 2009). The impact of imprisonment on women may be especially damaging and their reintegration process particularly challenging.

Data from this analysis also confirmed that substances, including illicit substances, are consumed inside prisons, although mostly at reduced levels compared with use before imprisonment. Drugs in prison are more difficult and expensive to access than in the community, which may contribute to a reduction in the number of users, but also in the frequency of use (Carpentier et al., 2018). PLP may also be reluctant to reveal their drug use inside prison, as they may incur in disciplinary sanctions (e.g., solitary confinement) or other measures that may involve a prolongation of the sentencing time. The way questions are asked (whether self-reported or face-to-face) or the prison context (more relaxed and open or more rigid and punitive) may influence the extent of validity in the answers (Carpentier et al., 2012). Furthermore, many people stop using drugs when they enter prison, others continue to use but may change to more harmful drug using patterns and behaviours and some may add new substances to their current patterns (EMCDDA, 2014). The need to increase the efficiency of the drug, due to its scarcity in prison, may also encourage some people who use drugs to adopt more harmful patterns of drug use, such as injecting, while in prison (Niveau & Ritter, 2008). A recent phenomenon reported in several European countries is the use of NPSs inside prisons, particularly synthetic cannabinoids, which lead to several negative consequences, including adverse health consequences for the users, increased violence and bullying, and challenges for prison management and the provision of drug treatment (EMCDDA, 2018b). The use of drugs inside prison, especially through an injection, may involve serious health risks, such as infectious diseases, because of the often low hygienic standard, overcrowding and lack of sterile injection equipment. People in prison may reuse syringes (Treloar et al., 2016) or use syringes that are crafted from items available in prison. Therefore, prisons need to develop clear strategies to deal with illicit drug use and related health needs. Prisons can represent a point of access to integrated prison-community healthcare and social services for usually unserved populations, such as people with drug use disorders. It is well established that appropriate drug treatment for PLP can reduce drug use as well as rates of reoffending (Stöver et al., 2017).

Finally, our analysis showed similarities and differences across countries in the extent and patterns of substance use both before and during imprisonment. At first in all countries compared with the general population, the prison population reported higher levels of drug use, showing common social risks existing in all countries. This information is crucial as it shows that, despite large differences across countries, the prison population is quite homogeneous when it concerns drug use. Second, however, there are large variations between countries that may reflect country differences in: patterns of drug use in the community (EMCDDA, 2018a), sentencing practices and functioning of the criminal justice system, organisation and structure of national prison systems, availability of drug treatment and harm reduction interventions inside prisons and methodological differences in the survey's implementation.

The prevalence of use of different substances by country mainly reflect similar differences reported in the data from the community, although at higher levels, as the population in prison include a large proportion of people with high level of drug use.

The national context is also important in analysing the heterogeneity. Differences in incarceration rates reflect different traditions in the implementation of prison policies, with the countries from the northeast of Europe, including those belonging to the previous Soviet Union having traditionally high incarceration rates.

Also, differences in drug policy may reflect differences in the presence of people who use drugs inside prison. For example, the Portuguese decriminalization drug policy aimed to replace punishment with drug treatment in case of crimes committed by people who use drugs (EMCDDA, 2011). In Portugal, LTP of heroin use in the current survey is 22% and the proportion of people with high-risk opioid use entering treatment for opioid (including heroin) is over 39% (EMCDDA, 2022). Differences also exist across countries between drug legislation and implementation of sentences, although little information is available at European level (EMCDDA, 2018c).

Furthermore, the availability of harm reduction interventions in prison play an important role. In Lithuania, at the time of the survey, the opioid substitution therapy (OST) inside prison was not provided; OST in prison has been introduced in 2018. This might have contributed to the high prevalence of heroin use inside prison in that country (EMCDDA, 2018a). In addition, in both Latvia and Lithuania prisons are organized in large cells where multiple people co-habit, which may facilitate substance distribution and substance use among people in prison (Teltzrow & Stöver, 2017). These are only a few explanatory factors and there may be others that are still unknown. More research and deeper analysis are needed to investigate country differences in the levels and patterns of substance use in prison settings (EMCDDA, 2018a).

Finally, methodological differences in the survey implementation and different prison conditions could be at the basis of differences in drug use prevalence. Lithuania and Slovenia are outliers in our findings for opposite reasons: Lithuania reported high levels and Slovenia low levels of substance use among PLP. In Slovenia responders were filling in the questionnaire at the presence of the prison staff, which may involve response bias, thus lowering the reported prevalence as respondents may fear the consequences of disclosing their drug using behaviour (e.g., fear of extended sentences or of losing benefits like home visits and so on).

5 | LIMITATIONS

The results presented here are subject to several limitations: (1) conducting research in prison is challenging; it is often difficult and time-consuming to obtain access to prisons for research purposes, and structural limitations of prison architecture and setup may limit the ideal research conditions (anonymity, confidentiality and so on) (Carpentier et al., 2012; EMCDDA, 2021b, 2022). For these reasons, studies carried out in prison are often monocentric although broader-based research is necessary. (2) Response bias: PLP may be reluctant to disclose their drug using behaviour, especially inside prison. Drug use is an illicit behaviour in many countries and it is often underreported also in the general population. This phenomenon is even more common in prison settings, where drug use may be subject to punishment or loss of some privileges. These factors combined may result in both underreporting and evasive answers. This may be particularly pronounced in Spain where responses were collected through face-to-face interviews.

Another limitation refers to (3) the participants' understanding of the questionnaire and recall bias: the prison population is largely constituted by people with low levels of literacy; also a high proportion of people in prison are reported to have mental health problems which may increase the risk of misunderstanding and valid answers. Many PLP are also foreign nationals and may have poor reading comprehension of the national language, if the questionnaire is not translated into their native language. Several measures were used to minimize the impact of these circumstances, as for instance questionnaire translation into the languages of the main foreign-national groups in prison, assistance for filling-in in the questionnaire to respondents who were illiterate or could not read or

write due to physical disability. Difficulties were also reported in responses to questions with specific time frames of substance use, such as last 12 months before imprisonment, as many people could not recall. (4) Adaptation of the survey tool (EQDP): each country adapted the survey to its own prison context, slightly modifying the questionnaire and methodology, as described in Table 1.

6 | CONCLUSIONS

The findings from the present study complemented the available evidence on patterns of drug use among PLP in seven European countries. PLP report a higher level of drug use compared with the general population across different European countries involved, albeit with some variability. This study also reported on the existence of drug use inside prison in all countries included, although at lower levels when compared to pre-detention.

Prisons can represent a point of access to engage individuals who use drugs in interventions that address drug use and risk factors related to both drug use and imprisonment taking into account social and health vulnerabilities, reducing harms of drug use inside prisons and after prison release. Specific services should address the needs of women in prisons.

The present study demonstrated the feasibility and added value of carrying out research on drug use among prisoners using a model questionnaire that contributes to the monitoring of complex health and social needs of prison populations and allows comparison across European countries. The EQDP is a new tool implemented only in recent years; the current analysis has allowed to improve the questionnaire and complement with further details on research implementation.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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PEER REVIEW

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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