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GLOBAL OVERVIEW DRUG DEMAND DRUG SUPPLY

WORLD DRUG REPORT 2022

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Comments on the report are welcome and can be sent to:

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UNITED NATIONS OFFICE ON DRUGS AND CRIME
Vienna

World Drug Report
2022

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PREFACE

Drugs can kill.

Addiction can be an unending, agonizing struggle for the person using drugs; suffering is needlessly compounded when people cannot access evidence-based care or are subjected to discrimination. The consequences of drug use can have ripple effects that hurt families, potentially across generations, as well as friends and colleagues. Using drugs can endanger health and mental health and is especially harmful in early adolescence. Illicit drug markets are linked with violence and other forms of crime. Drugs can fuel and prolong conflict, and the destabilizing effects as well as the social and economic costs hinder sustainable development.

The whole of the international community shares the same goals of protecting the health and welfare of people everywhere. But too often in the debate on drug policy approaches, we forget this basic and shared understanding, which is rooted in the fact that drug use for non-medical purposes is harmful.

We all want our children and loved ones to be healthy, and we want neighbourhoods and countries to be safe. As policymakers, we can see that illicit drug cultivation offers no way out for impoverished communities in the long run, that the drug trade has environmental impacts, and that drug trafficking along with associated corruption and illicit flows undermine the rule of law and stability.

Solutions to these shared threats and challenges to achieve our shared goals must also be shared and based on evidence. It is in this spirit that I am proud to present the World Drug Report 2022 from the United Nations Office on Drugs and Crime.

This is the first World Drug Report of the post-pandemic world. While countries continue to grapple with COVID-19 and its consequences, we have emerged from cycles of lockdowns to confront a "new normal". And we have found that the world post-pandemic remains one in crisis, faced with multiple conflicts, a continuing climate emergency and threat of recession, even as the multilateral order is showing troubling signs of strain and fatigue.

World drug challenges further complicate the picture. Cocaine production is at a record high, and seizures of amphetamine and methamphetamine have skyrocketed. Markets for these drugs are expanding to new and more vulnerable regions.

Harmful patterns of drug use likely increased during the pandemic. More young people are using drugs compared with previous generations. People in need of treatment cannot get it, women most of all. Women account for over 40 percent of people using pharmaceutical drugs for non-medical purposes, and nearly one in two people using amphetamine-type stimulants (ATS), but only one in five in treatment for ATS is a woman.

In the face of these multiple crises, we need to show greater care.

Care starts with evidence-based prevention and addressing perceptions and misperceptions of risk, including by taking a hard look at the messages our societies are sending to young people. UNODC research has shown that perceptions of cannabis harms have decreased in areas where the drug has been legalized. At the same time, the proportion of people with psychiatric disorders and suicides associated with regular cannabis use has increased, together with the number of hospitalizations. Some 40 per cent of countries reported cannabis as the drug related to the greatest number of drug use disorders.

Whole-of-society approaches are needed to ensure that people, young people most of all, have the information and develop the resilience to make good choices and that they can access science-based treatment and services for drug use disorders, HIV and related diseases when they need it.

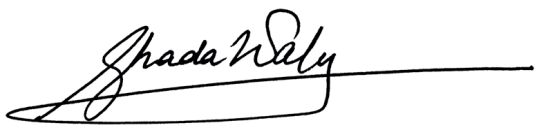
There can be no effective prevention or treatment without recognition of the problem and the necessary funding to address the problem. Public resources are stretched to the limit by competing demands, but we cannot afford to let commitment wane. We need to promote compassion and better understanding.

Care in crises means ensuring services and essential medicines for all, including people in emergencies and humanitarian settings; people left behind in the pandemic; and people facing barriers of stigma and discrimination.

Care is also manifested in shared responsibility, and we need to renew international cooperation to sustainably reduce illicit crop cultivation and tackle the criminal groups trafficking drugs.

The World Drug Report seeks to offer the data and insights to inform our joint efforts. This year's edition delves into the interplay between drugs and conflict, the impact of drugs on the environment and the effects of cannabis legalization, and identifies dynamics to watch, from the opiate market in light of developments in Afghanistan to dark web drug sales.

I hope the report serves as a basis for effective responses, and generates the support we need to continue shedding light on different aspects of the world drug problem, and assisting Member States to take action and save lives.



Ghada Waly, Executive Director
United Nations Office on Drugs and Crime

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EXPLANATORY NOTES

The designations employed and the presentation of the material in the *World Drug Report* do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Countries and areas are referred to by the names that were in official use at the time the relevant data were collected.

Since there is some scientific and legal ambiguity about the distinctions between "drug use", "drug misuse" and "drug abuse", the neutral term "drug use" is used in the *World Drug Report*. The term "misuse" is used only to denote the non-medical use of prescription drugs.

All uses of the word "drug" and the term "drug use" in the *World Drug Report* refer to substances controlled under the international drug control conventions, and their non-medical use.

All analysis contained in the *World Drug Report* is based on the official data submitted by Member States to the UNODC through the annual report questionnaire unless indicated otherwise.

The data on population used in the *World Drug Report* are taken from: *World Population Prospects: The 2019 Revision* (United Nations, Department of Economic and Social Affairs, Population Division).

References to dollars ($) are to United States dollars, unless otherwise stated.

References to tons are to metric tons, unless otherwise stated.

The following abbreviations have been used in the present booklet:

AIDS	acquired immunodeficiency syndrome
ATS	amphetamine-type stimulant
COVID-19	coronavirus disease
DALYs	disability-adjusted life years
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
Europol	European Union Agency for Law Enforcement Cooperation
FARC	People's Alternative Revolutionary Force
GDP	gross domestic product
GBL	*gamma*-butyrolactone
GHB	*gamma*-hydroxybutyric acid
ha	hectares
HIV	human immunodeficiency virus
INCB	International Narcotics Control Board
MDMA	3,4-methylenedioxymethamphetamine
NATO	North Atlantic Treaty Organization
NIDA	National Institute on Drug Abuse of the United States of America
NPS	new psychoactive substance
PWID	who inject drugs
RMIT	Royal Melbourne Institute of Technology
UNAIDS	Joint and Co-sponsored United Nations Programme on HIV/AIDS
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organization

WORLD DRUG REPORT 2022

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Annual Report Questionnaire Focal Points

The UNODC gratefully acknowledges the continuous efforts of the Annual Report Questionnaire Focal Points in the Member States to collate and report national data on drug demand and supply, which form the basis of the *World Drug Report*:

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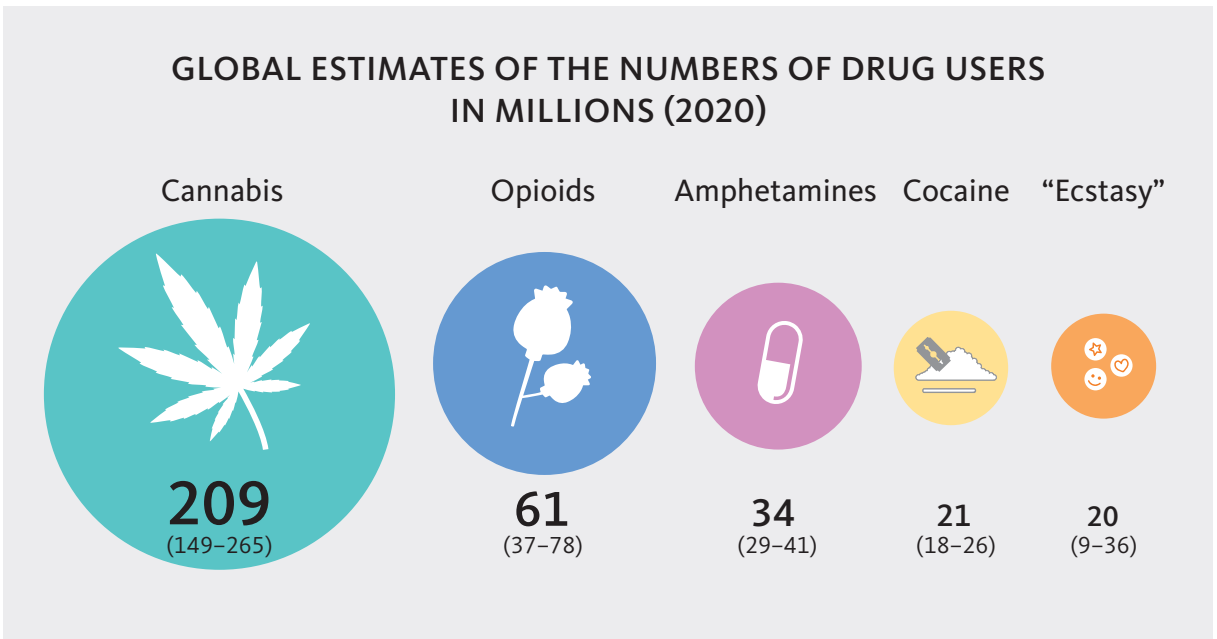
SCOPE OF THE BOOKLET

Constituting the second part of the *World Drug Report 2022*, the present booklet contains an overview of the global demand for and supply of drugs.

The first chapter of the booklet begins with the latest estimates of the number of people who use drugs, the distribution of those users by type of drugs, age and sex, and recent trends in the use of drugs. The chapter also reviews the impact of the coronavirus disease (COVID-19) pandemic on drug use patterns and service provision. Other issues examined in the chapter are the health consequences of drug use, including the number of people in treatment for drug use disorders and the extent of drug injecting and of HIV and hepatitis C among people who inject drugs. The chapter concludes with a review of the extent to which strategies, policies and interventions are in place to respond to the drug use problem.

The chapter on drug supply provides an overview of the extent of illicit crop cultivation and trends in drug production and trafficking at the global level. In addition, it reviews the latest evidence regarding the supply of drugs through the Internet, with a special focus on trafficking on the dark web. Finally, the booklet ends with an analysis of the relationship between illicit drug economies and situations of conflict and weak rule of law.



GLOBAL DRUG DEMAND

Extent of drug use

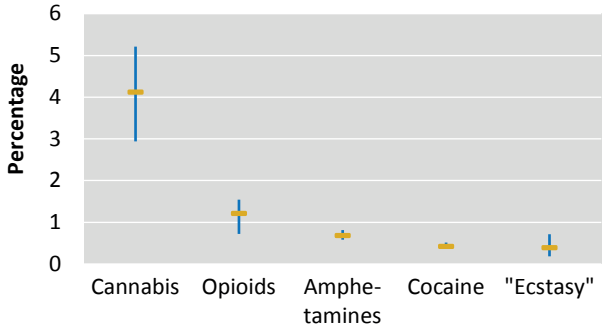
Drug use remains high worldwide

In 2020, an estimated 284[a] million people worldwide aged 15–64, majority of whom were men, had used a drug within the last 12 months. This corresponds to approximately 1 in every 18 people in that age group, or 5.6 per cent, and represents a 26 per cent increase on 2010, when the estimated number of people who used drugs was 226 million and prevalence was 5 per cent. This is in part attributable to global population growth. Comparisons over time of these global estimates should take into consideration their wide uncertainty intervals.

Global cannabis and amphetamines use up in 2020, opioid use largely stable, "ecstasy" and cocaine trends altered during pandemic

Qualitative information suggests that 2020 saw an overall increase in the use of cannabis – still by far the world's most used drug – and in use of amphetamines. Use of opioids remained stable in most reporting countries. The pandemic appears to have altered the previously increasing trend for cocaine and "ecstasy"-type drugs, perhaps largely due to forced closures of entertainment and hospitality facilities.

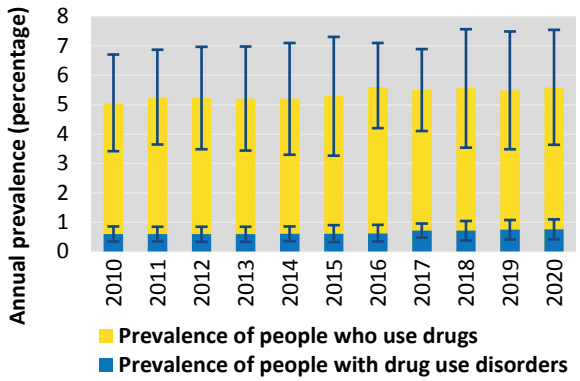
FIG. 1 Global estimates of prevalence of drug use in the past year, by drug, 2020 or the most recent year for which data are available



Source: UNODC, responses to the annual report questionnaire.

a 185–384 million.

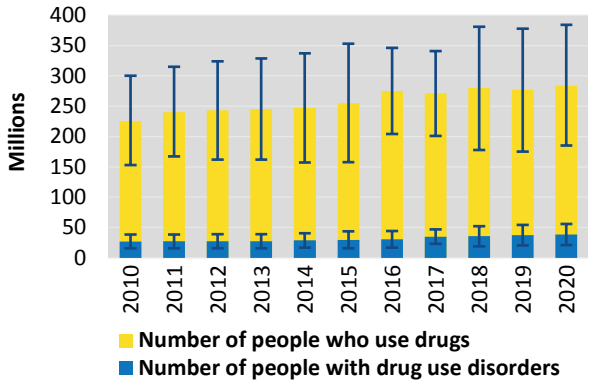
FIG. 2 Global prevalence of drug use and drug use disorders, 2010–2020



Source: UNODC, responses to the annual report questionnaire.

Notes: Prevalence estimates are based on the prevalence of adults (aged 15–64) who used drugs in the past year. The global estimates of the extent of drug use and drug use disorders reflect the best available information for 2020. Changes compared with previous years largely reflect the information updated by countries, for which new data on the extent of drug use were made available for the respective year. Therefore, global and regional estimates presented in a given year are based on both the new estimates that were available for a particular country in the reference year and the most recent estimates available for the other countries. For 2020, the estimated global prevalence of drug use is based on estimates from 110 countries covering 60 per cent of the world's population. Of those, new data points were reported for 20 countries in 2020.

FIG. 3 Global number of people who use drugs and people with drug use disorders, 2010–2020



Source: UNODC, responses to the annual report questionnaire.

Note: Estimated number of people (aged 15–64) who used drugs in the past year.

Cannabis

- Remains the world's most used drug
- 209 million past-year users in 2020
- Qualitative trends: overall increase in use in 2019–2020
- Quantitative trends: increase of 23 per cent in the number of cannabis users in 2010–2020

"Ecstasy"

- 20 million estimated users of "ecstasy"-type substances in 2020
- Multiple surveys point to reduced use, most likely related to COVID-19-related closures of venues where "ecstasy"-type substances are typically consumed, such as nightclubs

Opioids

- Use remains a major concern due to potentially severe health consequences
- 61 million past-year users of opioids for non-medical reasons in 2020
- 31 million of those were past-year users of opiates (mainly heroin)
- Qualitative trends: use overall stable in 2019–2020
- Quantitative trends: twofold increase in the number of opioid users in 2010–2020

Cocaine

- 21 million estimated past-year users of cocaine-type substances in 2020.
- Quantitative trends: long-term steady increase in the number of cocaine users in 2010–2019.
- However, in 2020, this trend was halted, with some countries reporting decreases in use, likely the result of measures to control the COVID-19 pandemic.

Amphetamines

- 34 million past-year users of amphetamines in 2020
- Qualitative trends: increase in use in 2019–2020, and during the last decade
- Quantitative trends: relatively stable situation in 2010–2020, but high level of uncertainty given large data gaps

GLOBAL BURDEN OF HARM DUE TO OPIOID USE DISORDERS

Opioids account for

of deaths due to drug use disorders (direct drug-related deaths) in 2019

Opioids account for

of treatment for drug use disorders in 2020

Opioid use disorders cost an estimated

12.9 million

years of "healthy" life lost due to disability and premature death in 2019

71% of years of "healthy" life lost due to drug use disorders

Source: UNODC, responses to the annual report questionnaire; and Institute for Health Metrics and Evaluation, "Global Burden of Disease Study 2019 Data Resources: GBD Results Tools". (For a more detailed description of disability-adjusted life years (DALYs), see *World Drug Report 2021*, booklet 2).

Key methodologies to measure the extent of drug use and the impact of COVID-19 on data reporting

It is important to note that data obtained in 2020 may not be directly comparable to data from previous years and caution should be exercised when interpretating data and estimates based in part or in full on surveys conducted during 2020. The coronavirus disease (COVID-19) pandemic has impacted agencies and researchers' ability to reliably assess drug use trends. Only 11 countries[i] reported household survey data collection in 2020. While this small number of countries reporting new data points is similar to other, non-pandemic-affected, years, 2020 findings should not be generalized as global trends, particularly given that the pandemic could have affected the comparability of trends over time even in countries that did report figures for 2020.

The pandemic brought with it significant disruptions to data collections[ii] and necessitated changes in methodologies in research on drug use and drug use disorders, as part or all of the data collection process moved online.[iii] While some limited insights can be obtained from other sources, such as wastewater analysis, caution is needed when interpreting such data. It is not yet possible to truly ascertain the impact of the COVID-19 pandemic on global trends in the prevalence of drug use.

In general, different methods can be used to assess drug use:

- Household surveys or general population surveys are typically large, nationally representative studies using probabilistic sampling. They support a certain level of international comparability when using similar standard recall periods of drug use (lifetime, past 12 months, past month) and by targeting similar age groups (often those aged 15–64), although differences in the data collection method (e.g. in-person vs. by phone) can substantially affect response rates and comparability.[iv] Their main drawback is reliance on self-reporting (see the methodological annex for more details).
- School and university surveys collect information on drug use among students. In addition to the challenges present in other surveys, in countries with non-negligible out-of-school populations who might have different levels of drug use, school surveys samples may not be representative of youth of the respective age[v] (most commonly those aged 15–16).
- Indirect methods estimate drug use prevalence based on statistical extrapolation from existing (e.g. administrative) data and are designed to overcome the drawbacks of limited coverage of hidden populations of people who use drugs in surveys, which is especially relevant in cases of drugs with low prevalence of use and high stigma associated with this use. Examples include multiplier methods, capture-recapture, multivariate indicator, truncated Poisson and network scale-up methods.[vi] These have their own challenges, such as relying on a number of assumptions (for example, stable population, no heterogeneity, etc.).
- Wastewater-based epidemiology-surveillance[vii] is a growing multidisciplinary field based on objective measures focused on laboratory analysis of communal wastewaters to estimate total consumption of or exposure to certain substances or pathogens in the community, including controlled drugs.[viii] The main limitation of this method is that it does not indicate the number of users or their patterns of use which contributed to the overall consumption detected.

Drug-related treatment data can inform on patterns and trends of drug use. The numbers of people in drug-related treatment is principally the resultant of two factors: prevalence of people with drug use (in particular those with drug use disorders) and the offer or availability of treatment. Therefore, while information on people in drug treatment can be used to understand patterns and trends in drug use and drug use disorders, caution must be exercised when interpreting it, as availability and accessibility of treatment and other factors need to be considered. These include factors such as geographical coverage of available interventions, or gender-specific reasons hindering access to treatment or stigma, among others.

To obtain more details on the analyses of data on drug use presented in the World Drug Report, please refer to the methodological annex published online alongside the report.

i Austria, Bulgaria, Chile, Israel, Latvia, the Netherlands, New Zealand, Norway, Spain, Sweden, United States of America

ii Substance Abuse and Mental Health Services Administration, *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health* (Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, 2021). p. 7.

iii Nora D. Volkow and Carlos Blanco, 'Research on Substance Use Disorders during the COVID-19 Pandemic', *Journal of Substance Abuse Treatment* 129 (October 2021): 108385, https://doi.org/10.1016/j.jsat.2021.108385.

iv UNODC, *Developing an Integrated Drug Information System* (United Nations, 2003).

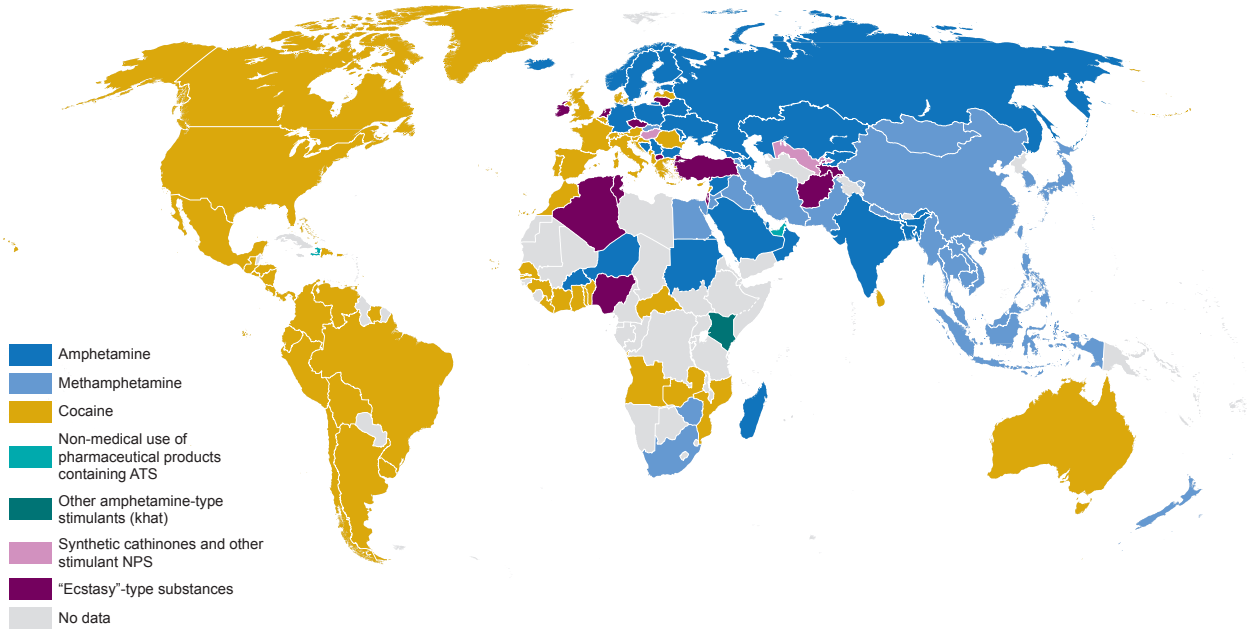
v EMCDDA, 'ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs' (Luxembourg: Publications Office of the European Union, 2020), http://www.espad.org/espad-report-2019#downloadReport.

vi UNODC, *Estimating Prevalence: Indirect Methods for Estimating the Size of the Drug Problem* (United Nations, 2003).

vii Alireza Zahedi et al., 'Wastewater-Based Epidemiology—Surveillance and Early Detection of Waterborne Pathogens with a Focus on SARS-CoV-2, Cryptosporidium and Giardia', *Parasitology Research* 120, no. 12 (December 2021): 4167–88, https://doi.org/10.1007/s00436-020-07023-5.

viii Ettore Zuccato et al., 'Estimating Community Drug Abuse by Wastewater Analysis', *Environmental Health Perspectives* 116, no. 8 (August 2008): 1027–32, https://doi.org/10.1289/ehp.11022.

MAP 1 **Most used stimulant drug, by country, in terms of number of users (2020 or most recent year for which data are available)**



Source: UNODC, responses to the annual report questionnaire.

Note: Information presented is based primarily on the ranking of prevalence of use of stimulants drugs in the respective country (96 countries), confirmed by the reported annual prevalence of use data (17 countries), or, in case of non-availability of either, on the data on people in drug treatment (number of people or ranking of primary drugs in patients/clients entering treatment – eight countries).

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

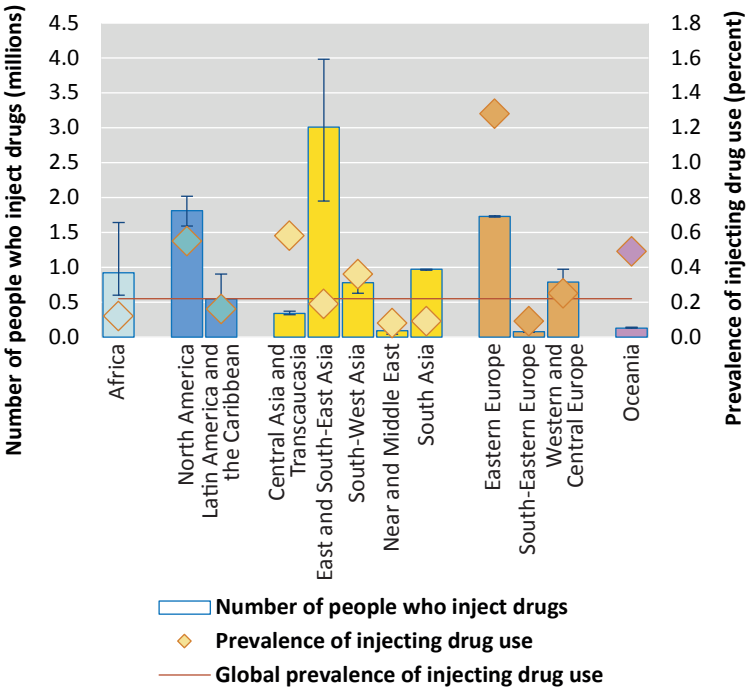
Preferred stimulant drug differs by country and by region

The term "stimulant drug" can refer to cocaine and ATS, as well as "ecstasy"-type substances, cathinones and some other NPS due to their stimulant effects on the central nervous system.

There are important regional and national differences as to which stimulant drug is most used.[b] The reasons for these differences lie in a complex interplay of drug markets dynamics and other factors (such as norms, social context, etc.). For example, high availability of certain stimulants at relatively low prices can correlate with elevated use (e.g. cocaine in Latin America),[1] and increased production can also trigger increased use (e.g. methamphetamine in Mexico).[2] Drug use to some extent responds to price, as it is evident from increases in emergency room visits following drops in cocaine prices.[3] Drug prices can also induce drug substitution (measured by "cross-price elasticity").[4] The disappearance of a specific drug from a market can also change the preferred stimulant drug, for example, the diminished presence of amphetamines and heroin in Hungary lead to a shift towards injection of more readily available synthetic cathinones.[5]

b Stimulant drugs are rarely the predominant drug group in a particular country or region, as that position is usually occupied by cannabis-type drugs. The aim of this analysis is to indicate the prevalence of use among the general population (where data are available), that is, number of users of stimulant drugs regardless of frequency of use. It is possible that among regular or intensive drug users, the preferred stimulant drugs are different than those displayed on the graph (for example, there are more past-year users of cocaine in Australia than of methamphetamine, however, among regular users, who also consume larger overall quantities of the drug, methamphetamine prevails).

FIG. 4 Regional patterns in injecting drug use, 2020



Sources: UNODC, responses to the annual report questionnaire; progress reports of UNAIDS on the global AIDS response (various years); the former Reference Group to the United Nations on HIV and injecting drug use; and published peer-reviewed articles and government reports.

Note: Prevalence of injecting drug use refers to the percentage of the population aged 15–64. The estimated global prevalence of injecting drug use is represented by the horizonal red line.

More than 11 million people worldwide inject drugs

Injecting drug use is a high-risk activity and a major cause of drug-related harm, with PWID experiencing multiple serious negative health consequences. Injecting drug use is associated with high risks of fatal and non-fatal overdose and the development of serious and potentially life-threatening infectious diseases.[6,7]

UNODC, UNAIDS, WHO and the World Bank jointly estimate that some 11.2 million persons worldwide injected drugs in 2020. There has been no measurable change in the estimated global prevalence of injecting drug use from the previous estimate for 2019, which was also 0.22 per cent of the population aged 15–64. However, any trend data must be viewed with caution as the methodologies used to produce national or subnational PWID population size estimations may have changed.

Approximately 59 per cent of PWID worldwide reside in East and South-East Asia, Eastern Europe and North America. Injecting drug use remains particularly prevalent in Eastern Europe and, to a lesser extent, Central Asia and Transcaucasia, and North America, with rates that are 5.8, 2.6 and 2.5 times the global average, respectively.

Polydrug use: a common pattern

The term "polydrug use" includes a wide spectrum of substance combinations used either concurrently or sequentially.[c] Polydrug use is complex to measure in studies and routine data collections, and it is difficult to find common ground when comparing various studies.

People who use multiple drugs do so for a variety of reasons, such as to achieve a cumulative or synergistic effect which increases the overall psychoactive experience; a lack of availability or decreases in purity or increases in price of their preferred drug;[d] to offset the negative effects of the drugs used by combining drugs with opposite effects;[e] or, simply, the unwitting use of multiple drugs due to adulteration of substances sold on the black market mixed with other substances.[f]

Polydrug use carries with it acute and chronic risks, some of which are related to the interactions between substances. Some of the most severe consequences include elevated risk of drug toxicity resulting in fatal and non-fatal[8] overdoses, accidents, hepatotoxicity, co-dependency and compromised treatment outcomes.[9] In addition to controlled drugs, co-use of substances which are not internationally controlled, such as alcohol, increases health risks.[10]

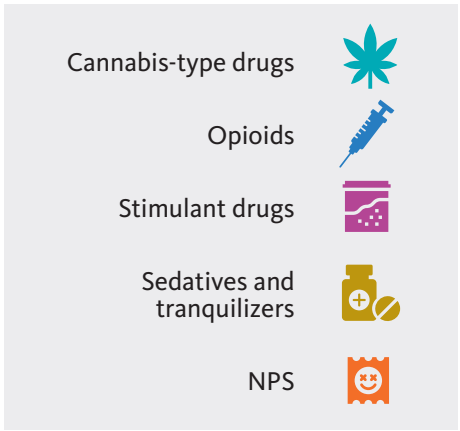
c Excluding tobacco and alcohol in the present analysis, unless otherwise specified. Details of the definition on the country level may, however, differ.

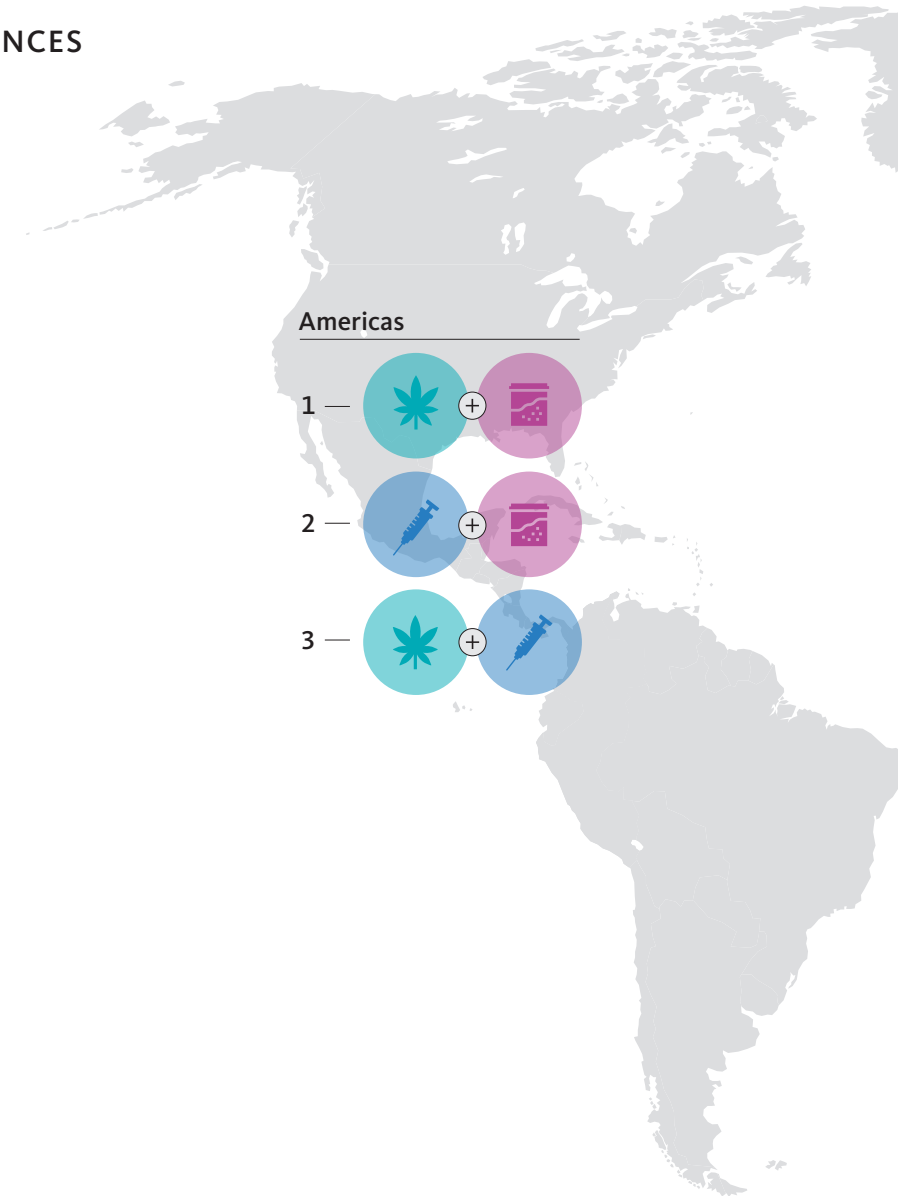
d A related phenomenon is "cross-tolerance" — the pharmacological ability of one drug to have generally the same effect on the nervous system as another drug. The phenomenon of cross-tolerance explains in part the frequent substitution of drugs that have a similar effect.

e For example, "speed balling", in which cocaine is injected with heroin or other opioids, or heroin is used with methamphetamine or amphetamine.

f Recent examples include the lacing of cocaine and methamphetamine with fentanyl in the United States and the selling of a mixture of MDMA and eutylone as "ecstasy" in New Zealand.

MOST COMMON COMBINATIONS OF SUBSTANCES IN POLYDRUG PATTERNS OF USE BY REGION





EXAMPLES OF REPORTED COMBINATIONS PER REGION

Americas

- Cannabis herb and cocaine
- Opioids and stimulants
- Hallucinogens and sedatives or tranquilizers and/or cannabis
- Frequently are also reported combinations with alcohol

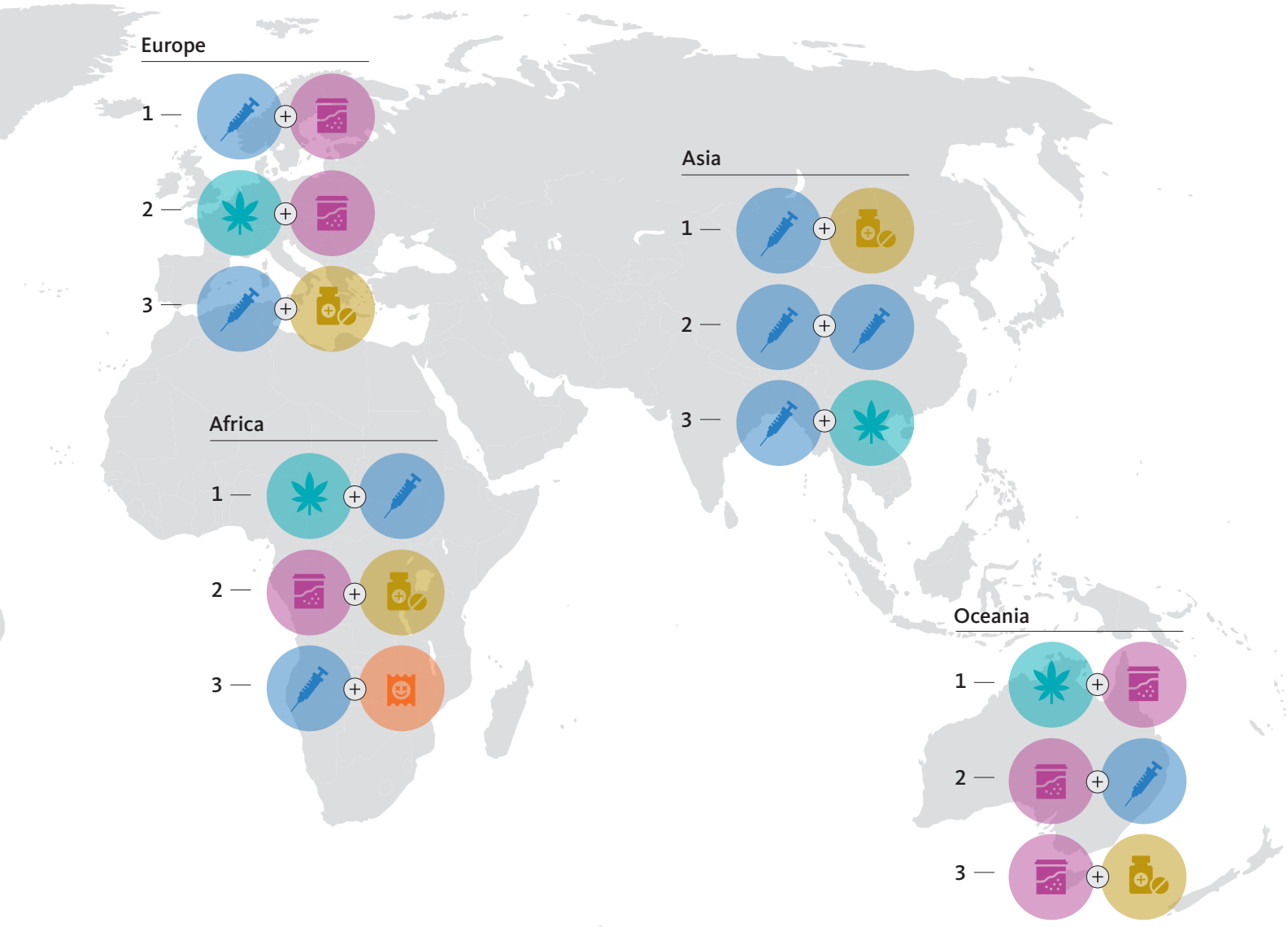
Europe

- Heroin with cocaine or “crack” cocaine
- Buprenorphine with amphetamine or benzodiazepines
- Methadone and cocaine
- Heroin and benzodiazepines
- Cannabis with NPS, or with cocaine and ecstasy

Africa

- Cannabis with heroin or pharmaceutical opioids
- Khat with diazepam/valium or with codeine syrup
- NPS with sedatives/tranquilizers, heroin, illicit methadone and/or cannabis
- Heroin with non-medical use of pharmaceutical drugs (flunitrazepam, benzhexol or amitriptyline) with or without cannabis

Source: UNODC, responses to the annual report questionnaire.



Asia

- Heroin with triazolam, midazolam or zopiclone
- Methadone or morphine with heroin/opium
- Opiates and cannabis (or opioids and cannabinoids)
- Methamphetamine or 'captagon' with benzodiazepines with or without cannabis herb
- Methamphetamine with ketamine
- Cannabis and pregabaline

Oceania

Examples of commonly reported combinations:

- Cannabis and amphetamines
- Amphetamines and heroin
- Amphetamines and benzodiazepines

Polydrug use is relatively low among the general population. Of the seven countries able to provide the percentage of the general population that has used more than one type of drug in the past year, that past-year prevalence varied between 0.3 per cent in Portugal and 3.4 per cent in Uruguay.[g]

However, among people engaging in high-risk drug use, polydrug use is far more common.[11] For example, in 1,311 syringes collected from eight European cities and analysed for the presence of drugs, 32 per cent contained multiple drugs belonging to different drug categories,[12] indicating significant concurrent polydrug use among people who inject drugs. Prevalence of past-year polydrug use among people engaging in high-risk drug use, including injecting, may be substantially higher. In the 23 countries and territories reporting data on polydrug use occurrence in drug-related treatment, 44.5 per cent of the approximately 50,000 people in treatment were treated due to the use of more than one drug. That proportion varied by country, from 9.7 per cent in Italy to 81.2 per cent in Luxembourg.[h]

The impact of the COVID-19 pandemic on drug use

The pandemic may have affected patterns of use more than the number of people who use drugs

UNODC first addressed the impact of COVID-19 in the *World Drug Report 2020* and provided an overview of the impact of the initial wave of the pandemic on drug use and people who use drugs in the *World Drug Report 2021*.[13] Another year on, the restrictive measures related to the pandemic have continued to influence the socioeconomic landscape. More information on its impact on drugs continues to emerge, although it is still not possible to provide definitive answers.

g Annual report questionnaire. Portugal, Belgium, Bulgaria, Hungary, Latvia, Spain, Uruguay. Exact definitions of polydrug use may vary.

h Annual report questionnaire. Italy, Uzbekistan, Switzerland, Mexico, Saudi Arabia, Panama, Hungary, Oman, Australia, Gibraltar, Algeria, Belgium, Ireland, Cyprus, Poland, South Africa, Guatemala, Slovenia, Slovakia, Finland, Portugal, United Kingdom, and Luxembourg. Exact definitions of polydrug use and details of data collection about polydrug use may vary.

Newly available data broadly confirm the initial UNODC findings[14] that drug use and drug markets have proved resilient to the changes brought about by COVID-19. Changes observed during lockdowns were generally temporary and largely waned as restrictions were lifted.[15]

The pandemic has seen heterogenous shifts in patterns of drug use, in terms of geography[16] and individual experience,[17] although some common trends for clusters of countries are visible, mostly showing changes in patterns of use among those already using drugs.

Some countries in North America and Europe reported overall increases in drug consumption since the start of the pandemic,[18, 19] especially among people already using drugs frequently,[20] and mostly during the first lockdown.[i, 21] Increased relapses or elevated risk of relapses into substance use were also observed by the Bahamas, Canada, Israel, Japan, South Africa and the United States.[22, 23, 24] For example, in Japan, a national survey of patients with drug-related psychiatric disorders identified 5.8% users of methamphetamine as their primary drug (n=1461) having a COVID-19-related relapse.[25] A therapy of more than a year had a protective effect against relapse.[26]

Studies confirmed overall increases in consumption of alcohol, tobacco and cannabis, especially during the first lockdowns. While the number of people using cannabis remained stable in countries where data for 2019 and 2020 are available (e.g. Australia, Canada, Chile and some European countries), consumption volumes grew due to increased frequency of use[27] and quantities used,[28] with evidence most clearly available for use of herbal cannabis.[29]

Increases were observed in non-medical use of sedatives, such as benzodiazepines, tranquilizers and other psychiatric pharmaceuticals,[30, 31] reflected in increased treatment demand and the presence of these substances being found in the deceased.[32] Increase in use of sedatives and tranquilizers was particularly prevalent among women.[33]

An overall temporary decrease in use of drugs typically consumed in recreational venues was observed during

i Germany, Austria, Luxembourg, Belgium.

lockdowns. This was particularly true for MDMA[34], but also applicable to cocaine and other substances.[35, j] Respondents to an online drug survey from 22 countries also reported overall decreases in past-year prevalence of use of most substances during 2020 compared with pre-pandemic levels of use in 2019.[36]

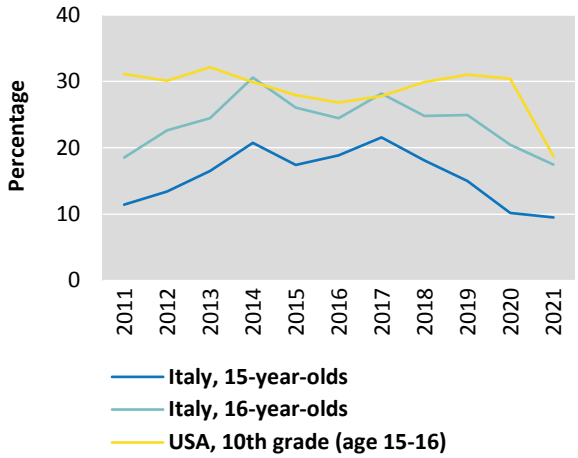
No reporting countries observed an increase in the number of new persons using drugs, likely due to reduced face-to-face social interaction.[37] Recent school surveys in the United States, the recall periods of which coincide mostly with 2020 and 2021, recorded historical decreases in past-year substance use among the young respondents.[38] While the major decrease in past-year drug use among United States adolescents is under further research scrutiny, the data available to date suggest decreased availability, increased parental monitoring and decline, due to social distancing rules, in social events where drug use is likely to be occurring as important factors[39]. Similar trends were observed in other countries, for example, a decrease in drug use among Italian adolescents[40] and the halting of a trend of age-related increase in cannabis use in a Canadian cohort of adolescents.[41]

Stay-at-home orders disrupted drug markets and caused fluctuations in availability, prices and purity. Belgium, Latvia, Poland and Slovakia all reported increases in small-scale domestic drug production to combat market dependency, in particular the cultivation of cannabis for personal use.[42] Changes in drug use were also caused by mental health factors related to the pandemic, such as anxiety, uncertainty and stress.[43] The impacted availability of treatment services in many locations[44] may also have had consequences on substance use. On the other hand, a United States study suggested that satisfying social activity, even in small amounts, had a protective effect against increased drug use.[45]

Local dynamics in the impact of the pandemic on drug use

While many global and regional trends have been observed during the pandemic, certain local dynamics have also emerged.

FIG. 5 **Prevalence of past-year use of any drug in high school students in United States of America and Italy**



Source: United States, National Institute on Drug Abuse, Trends and Statistics, "Monitoring the Future 2021 Survey Results". Available at https://nida.nih.gov/drug-topics/trends-statistics/infographics/monitoring-future-2021-survey-results (published 15 December 2021, accessed on 15 January 2022); and Italy, ESPAD Italia, Institute of Clinical Physiology, National research Council of Italy.

A study in a city in Vietnam has identified new risk behaviours during the Covid-19 pandemic among methamphetamine users, such as group use including sharing smoking equipment and a trend in increase in unsafe sex practices.[46] An increase in unsafe sexual practices similar to the 'chemsex'[k] phenomenon observed elsewhere[47] was also reported in Thailand in the press[48].[49]

In China, people substituted their usual drug of choice, mostly methamphetamine or heroin, with locally produced substances such as pethidine, methaqualone, synthetic cannabinoids, nitrous oxide and fluoroketamin[50] but also tramadol, and dextromethorphan[51] during periods of drug unavailability. In Pakistan, young people who use drugs moved to readily available substances such as painkillers, while Jordan reported increased popularity of the locally produced NPS called "Joker".[52]

j For more details, see booklet 4 of the present report, 'Cocaine, Amphetamine-type stimulants and New psychoactive substances'.

k Chemsex is a U.K.-origin term meaning intentional sex under the influence of psychoactive drugs, mostly among men who have sex with men.

IMPACT OF THE COVID-19 PANDEMIC ON DRUG USE

Increases in overall cannabis consumption, mostly due to increased frequency and quantity used by existing users rather than recruitment of new users

Increases in non-medical use of sedatives, such as benzodiazepines, tranquilizers and other psychiatric pharmaceuticals

Decreases in drug use of adolescents which conincided with lockdown periods

Temporary decreases of drug use at recreational venues during lockdowns, in particular MDMA

Regular drug use less affected, but users with drug use disorders more often experienced withdrawal and relapse. Greater willingness to access treatment was not met with sufficient service availability

Service provision was disrupted with drug use prevention, drug-related treatment and other services for people who use drugs experiencing closures, limited capacity and/or lower in-person attendance

Lower COVID-19 vaccination uptake in people who use drugs despite them being a priority group for this intervention, associated with lower trust in the medical system and access barriers

Innovation in service delivery *(such as tele-medicine)* may be used also after the pandemic, but need more research for successful implementation

New Zealand recorded a gradual increase in the presence of synthetic cathinones, primarily eutylone, sold as MDMA (and which was often mixed with some amounts of MDMA), alongside a decrease in MDMA seizures. This is ascribed to supply chain disruptions caused by the pandemic.

Greece, meanwhile, was among a cluster of Southern European countries which saw a pronounced increase in cocaine consumption (as detected in cocaine metabolites found in communal wastewater) during lockdowns, with easing of restrictive measures in Greece being followed by declines in estimated use.[53]

In some countries, lower availability also caused increases in withdrawal experiences and risk behaviour such as, in Morocco, the sharing of doses purchased among several people.[54] A survey among people who use drugs in the United Kingdom reported an increase in withdrawal symptoms, non-fatal overdoses and the sharing of injection equipment.[55]

The United Kingdom survey also confirmed an overall increase in drug use, mostly of cannabis, during its first lockdown. It showed that almost two thirds of people who supplied drugs adhered to the government-advised social distancing measures. China reported that such rules and closed entertainment venues saw drug use shift to private residences and vehicles, and, in some instances, people were reported to have taken drugs together in online video chatrooms.[56]

Impact of subsequent waves of COVID-19 on people who use drugs: adaptation and pandemic fatigue

Some studies are emerging on the impact of the continued health pandemic itself on people who use drugs.

One of the first studies, following a cohort of Australians who use drugs, suggests stabilized levels of drug use and even improved mental health among the study participants during subsequent waves of the pandemic

compared to the first wave, suggesting certain level of adaptation to the health crisis.[57] A study in Israel sampling the general population indicates more pronounced increases in alcohol and drug use during subsequent waves of the pandemic, which can possibly be ascribed to pandemic fatigue and frustration with the continuing health crisis.[58]

As the world continues to react to the pandemic and the situation develops, there is the possibility that changes witnessed since the onset of COVID-19 could lead to longer-term effects for health and the economy and, ultimately, on drug use, although possible decreases in drug initiation could temporarily counterbalance that effect.[59]

Distribution of people who use drugs

Drug use remains concentrated among men and the young population

Drug use remains unevenly distributed among the population. Besides regional and national differences, the most obvious universal factors are sex and age.

Men are more likely than women to use most drugs and young people are more likely to use any drug. This holds true for most regions and most drug types.[60]

While overall drug use remains lower among women than men, differences between the sexes vary substantially by region and, to some extent, by drug. For example, according to the most recent data available from household surveys in 64 countries, less than a third of people who use cannabis or cocaine worldwide are women. However, this can vary substantially by region, likely related to opportunities for women to use drugs, culturally defined roles, and other social factors.[61]

Women exhibit similar prevalence of use for some substance groups and can outnumber men. This is often true for non-medical use of pharmaceutical drugs, particularly opioids, and sedatives and tranquilizers.

Women represent more than 40 per cent of people who use amphetamines and engage in non-medical use of pharmaceutical stimulants, opioids and sedatives and tranquilizers in countries with available data. Factors likely playing a role in this include greater vulnerability to the reinforcing (rewarding) effects of stimulants[62] and specific reasons for female drug use including weight control, work-related exhaustion,[63] and homecare, childcare and family responsibilities.

The proportion of users by sex was almost equal in a pooled estimate of non-medical use of sedatives and tranquilizers. Women had higher prevalence than men of non-medical use of sedatives and tranquilizers in the majority of countries with available data (31 out of 48) and equal prevalence to men in a handful of countries. The share of women was similarly high among non-medical users of pharmaceutical opioids. The misuse of these substances is usually associated with self-treatment of pain, anxiety, symptoms of depression, tension and sleep problems, all of which are more common among women than men.[65]

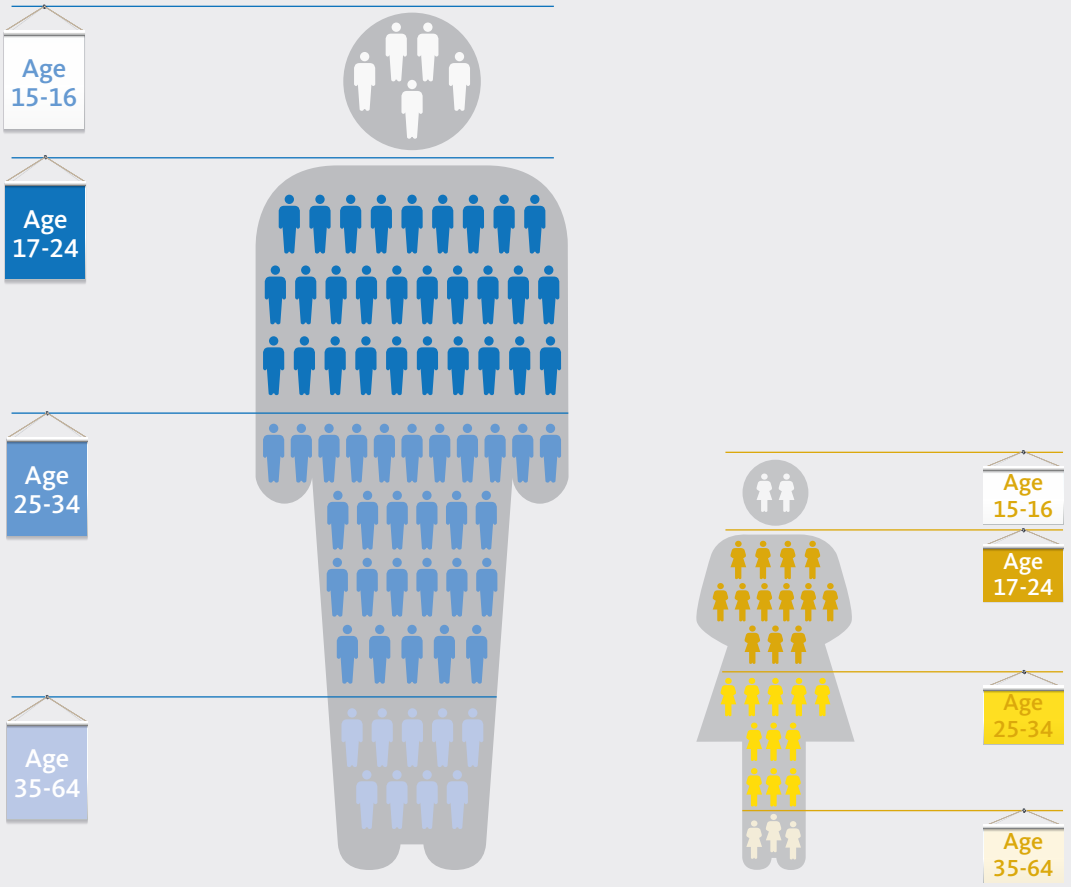
Women who use drugs face multiple vulnerabilities, some likely amplified by the COVID-19 pandemic

Important differences exist between men and women in drug use patterns and in the progression of development of drug use disorders, including in processes of drug use initiation and social and biological factors.[66] These differences are especially relevant in the design of prevention of drug use and treatment of drug use disorders.

Overall, men have a higher prevalence of drug use, but women are more likely to see a faster increase in rate of consumption and possible progression to drug use disorders than men.[67] Women who inject drugs have a greater vulnerability to HIV, hepatitis C and other blood-borne infections than men,[68] and excess mortality risk in women who use drugs is typically higher than in men (largely due to lower mortality rates among women of corresponding age in the general population).[69]

Men who use drugs are more likely than women to suffer from externalizing behavioural problems such as conduct, attention-deficit hyperactivity and antisocial personality disorders,[70] while women are more likely to suffer from internalizing problems such as

GLOBAL CANNABIS USE ACCORDING TO AGE AND GENDER



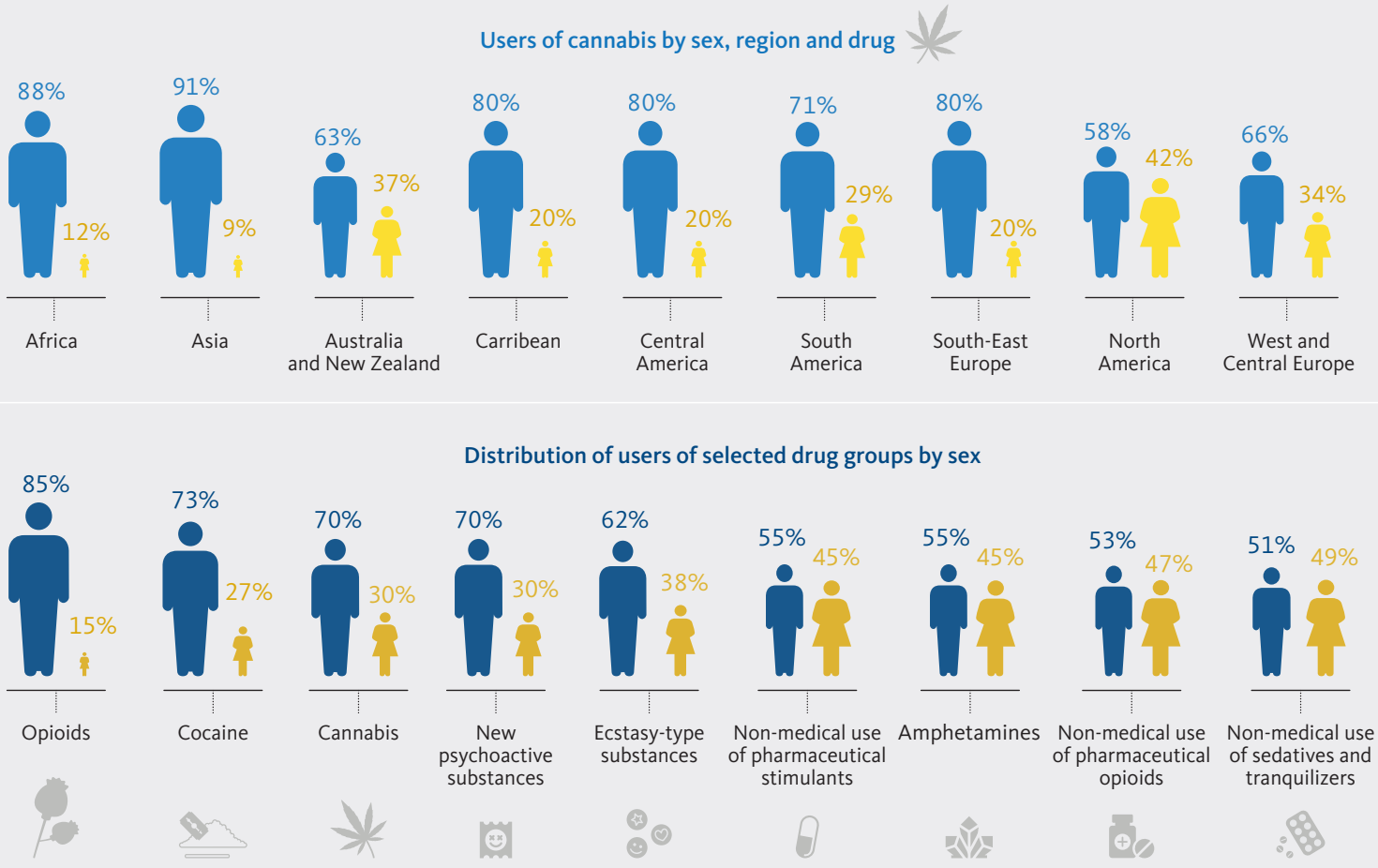
Source: UNODC, responses to the annual report questionnaire; EMCDDA, ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs; and study reports.[71]

Note: Estimates are based on self reported use of cannabis in the past year.

depression and anxiety.[72] Among men, childhood adversity is more likely to lead to drug use as a means of social defiance,[73] while for women, such adversity is more likely to be internalized as anxiety, depression, and social withdrawal, with those who experience it more likely to use substances to self-medicate.[74] Women who use drugs are two to three times more likely to be co-diagnosed with post-traumatic stress disorder, typically due to a history of repeated childhood physical and/or sexual abuse.[75] For men, this dual diagnosis with drug use disorders is typically a result of combat or crime trauma.[76]

Despite drug use being lower among women overall, women who use drugs face gender-specific vulnerabilities. For example, women who use drugs have a prevalence of suffering gender-based violence that is two to five times higher than women who do not use drugs[77] and may also face additional vulnerabilities related to pregnancy, breastfeeding and parenting in general.[78]

USERS OF CANNABIS BY REGION AND DRUG



Source: UNODC, responses to the annual report questionnaire.
Note: Estimates are based on annual prevalence of use estimates from household or general population surveys conducted in 13 to 52 countries depending on the drug.

In most regions, women are underrepresented in drug treatment,[l] with evidence suggesting numerous additional barriers to access. These include fear of legal sanctions, increased social stigma, lack of childcare and fear of losing custody while in treatment, and family expectations and responsibilities.[79] Women who undergo drug-related treatment have a higher risk of craving and relapse than men,[80] and women who use drugs who are members of certain groups, for example, trauma and violence survivors, people with comorbidity, sex workers, prisoners and members of ethnic minorities, face more severe vulnerabilities, including higher levels of stigma and discrimination.[81]

l That is, the proportion of women is lower among treated drug users compared to the proportion of women among last-year users of drug classes included in the analysis.

Women who use drugs may be disproportionally affected by the pandemic

While the COVID-19 pandemic alone may have had a higher health toll on men[i], there are indications that it has had a disproportional socioeconomic impact on women compared with men, primarily due to background vulnerabilities and socioeconomic factors such as:

- Financial: lower incomes, less savings and higher risks, even in high-income countries.[ii]
- Employment: less job security and overrepresentation in sectors vulnerable to lockdowns.[iii]
- Family: responsible for most single-parent households and additional care responsibilities with school closures.[iv] Intensification of women's unpaid care and domestic workloads during the pandemic was reported,[v] adding to multifactorial stress.[i]
- Domestic violence: multiple countries reported spikes during COVID-19 lockdowns,[vi, vii] especially in the presence of drug use,[viii] while access to support services and emergency measures for victims was often limited.[i, ix] For some women, drug use was part of the coping mechanism with increased intimate partner violence during the pandemic.[x]

Emerging studies in some countries appear to suggest that:

- Women were more likely to report increased substance use during the first wave of the pandemic, especially for sedatives and tranquilizers[xi] (Austria).
- Women who use drugs more frequently reported worsening mental health problems in the second wave[xii] (Belgium).
- Drug service utilization by women was more affected by the pandemic than that of men. This was true even for women-only drug centres[xiii] (Nigeria).

i Jade Connor et al., 'Health Risks and Outcomes That Disproportionately Affect Women during the Covid-19 Pandemic: A Review', *Social Science & Medicine* 266 (December 2020): 113364, https://doi.org/10.1016/j.socscimed.2020.113364.

ii Union for the Mediterranean, 'Women Economic Participation and the Impact of Covid-19', 16 November 2020, https://ufmsecretariat.org/women-economic-participation-and-the-impact-of-covid-19/.

iii Scottish Government, 'Scotland's Wellbeing: The Impact of COVID-19', December 2020, https://nationalperformance.gov.scot/sites/default/files/documents/NPF_Impact_of_COVID-19_December_2020.pdf.

iv European Institute for Gender Equality, 'Gender Equality and the Socio-Economic Impact of the COVID-19 Pandemic' (Publications Office, 2021), https://data.europa.eu/doi/10.2839/071987.

v United Nations Women, *From Insights to Action: Gender Equality in the Wake of COVID-19*, 2020, https://doi.org/10.18356/f837e09b-en.

vi European Institute for Gender Equality, 'The Covid-19 Pandemic and Intimate Partner Violence against Women in the EU' (Publications Office of the European Union, 2021), https://data.europa.eu/doi/10.2839/56091.

vii Odette R. Sánchez et al., 'Violence against Women during the COVID-19 Pandemic: An Integrative Review', *International Journal of Gynecology & Obstetrics* 151, no. 2 (November 2020): 180–87, https://doi.org/10.1002/ijgo.13365; Elisabeth Roesch et al., 'Violence against Women during Covid-19 Pandemic Restrictions', BMJ, 7 May 2020, m1712, https://doi.org/10.1136/bmj.m1712.

viii Kamran Bagheri Lankarani et al., 'Domestic Violence and Associated Factors during COVID-19 Epidemic: An Online Population-Based Study in Iran', BMC Public Health 22, no. 1 (December 2022): 774, https://doi.org/10.1186/s12889-022-12536-y.

ix Kim Usher et al., 'Family Violence and COVID-19: Increased Vulnerability and Reduced Options for Support', *International Journal of Mental Health Nursing* 29, no. 4 (August 2020): 549–52, https://doi.org/10.1111/inm.12735; United Nations Women, *From Insights to Action*.

x Amanda Devoto et al., 'Women's Substance Use and Mental Health During the COVID-19 Pandemic', *Women's Health Issues*, January 2022, S1049386722000044, https://doi.org/10.1016/j.whi.2022.01.004.

xi Julian Strizek et al., 'Repräsentativerhebung zu Konsum- und Verhaltensweisen mit Suchtpotenzial' (Wien: Bundesministeriums für Soziales, Gesundheit, Pflege und Konsumentenschutz, April 2021).

xii Luk Van Baelen et al., "COVID-19 and People Who Use Drugs: Impact of the Pandemic on General Anxiety and Depressive Disorders among Adults in Belgium," *Journal of Affective Disorders* 295 (December 2021): 946–53, https://doi.org/10.1016/j.jad.2021.08.069.

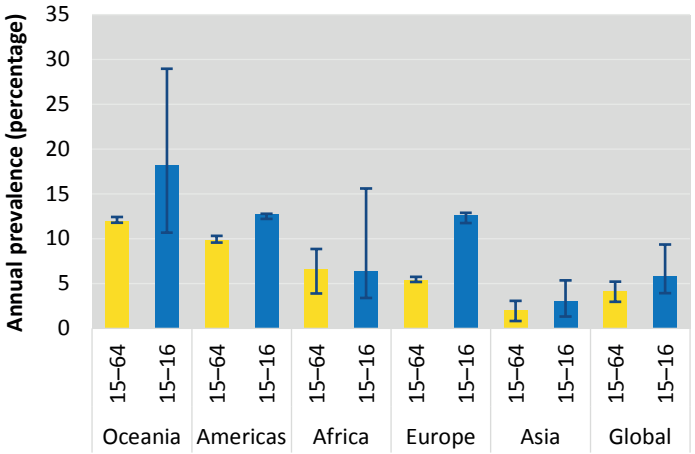
xiii Ediomo-Ubong Ekpo Nelson, Emeka W. Dumbili, and Ogochukwu Winifred Odeigah, 'Drug Use Treatment during COVID-19 Pandemic: Community-Based Services in Nigeria', *Journal of Substance Use* 26, no. 4 (4 July 2021): 391–96, https://doi.org/10.1080/14659891.2020.1838640.

Adolescents in some countries now more experienced in drug use than past generations

Adolescence (12–17 years of age) can be a critical risk period for substance use initiation, even if the highest levels of drug use are seen at later ages.[82] Any level of drug use can be harmful for adolescents.[83] In addition to the immediate health risks, drug use among adolescents is often associated with increases in other risk behaviours.[84] It can lead to faster development of dependency than for adults[85] and lead to other problems in adulthood,[86] some of which are consequences of lower educational attainment.[87]

Survey data across all regions show higher prevalence of cannabis use in the past year among adolescents than in the entire population of productive age (ages 15–64).

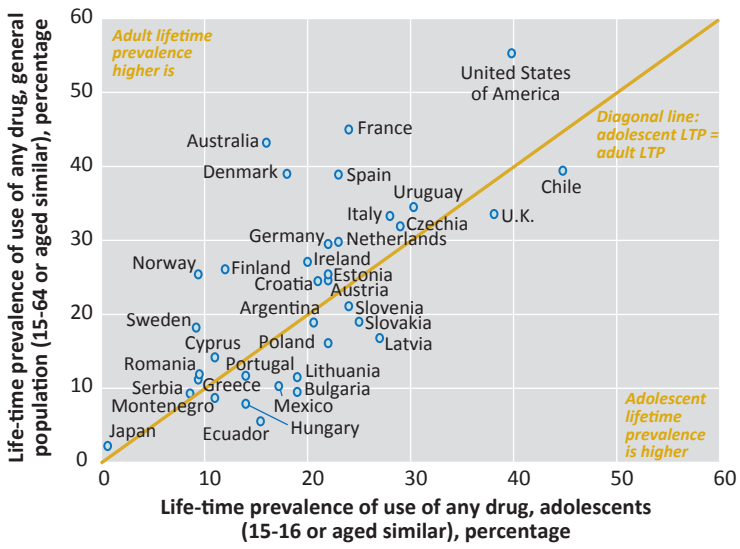
FIG. 6 Global and regional use of cannabis among people aged 15–16, and among the general population aged 15–64 (2020 or most recent year for which data are available)



Source: UNODC, responses to the annual report questionnaire, and other government reports.

Note: Estimates of the annual prevalence of cannabis use among those aged 15–16 are based on school surveys in most countries and may not be representative of all those aged 15–16.

FIG. 7 Use of any drug, in adolescents (aged 15–16 or similar) and in the general population (aged 15–64 or similar) (2020 or the most recent year for which data are available)



Source: UNODC, responses to the annual report questionnaire and other government reports; EMCDDA, ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs.

Note: School surveys conducted between 2014 and 2019, general population surveys between 2013 and 2020. Thirty-six countries included in analysis.

Data show that in many countries, the current generation of adolescents is experiencing a level of drug use which is higher than the summary lifetime experience of previous generations.[88, m] While methodological limitations apply (such as recall bias making it harder for the older generation to recall drug use when they were young), it can be expected that as the cohort of current adolescents of these countries age, an increase in lifetime prevalence of drug use will occur among those countries' general populations.

Health consequences of drug use

Drug use brings with it the likelihood of several negative health consequences. These can include a range of physical and mental health disorders, foremost of which are dependence, HIV infection, hepatitis-related liver diseases, overdose and premature death.

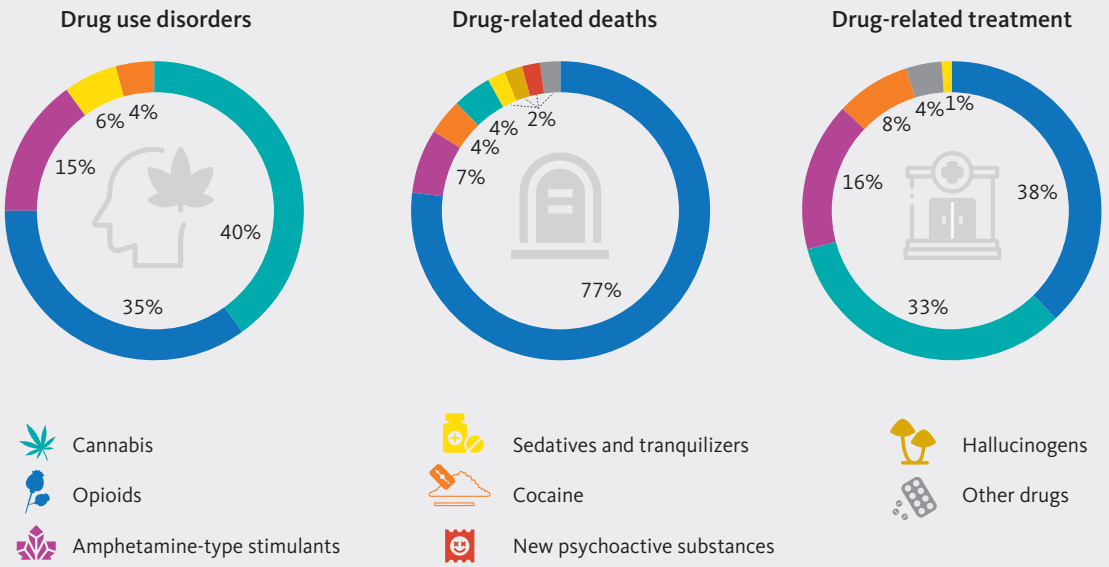
Analysis of the impact of drugs on health is affected by the available data and information. This chapter analyses information mostly collected through the UNODC annual report questionnaire. The core information of the annual report questionnaire focuses on drug use disorders, harms related to drug injection, such as blood-borne infectious diseases, drug-related treatment, and drug-related mortality. While these consequences and harms are the focus of this section, it is important to remember that drug use can cause other harms.

Overall prevalence of drug use disorders is stable, but the number of people with drug use disorders is up, mainly due to global population growth

Of the estimated 284 million people who used drugs in the past year, approximately 13.6 per cent are estimated to suffer from drug use disorders. This means that their drug use is harmful to the point where they may experience drug dependence and/or require treatment. This corresponds to a prevalence of drug use disorders of 0.76 per cent of the global population aged 15–64.

m Some other methodological differences include different methods of data collection with possible implications on the self-report reliability, possible differences in the definition of 'any drug', etc.

SHARE OF COUNTRIES REPORTING DRUGS MOST HARMFUL



Source: UNODC, responses to the annual report questionnaire.

Note: Proportions are based on ranking drug groups according to the number of people with drug use disorders due to the respective drug group. Data from 48-85 countries. The graph slices represent proportions of countries and as no weighting by population size was performed and many countries were not able to provide data, they do not represent the global distribution of drug use disorders.

Qualitative assessments

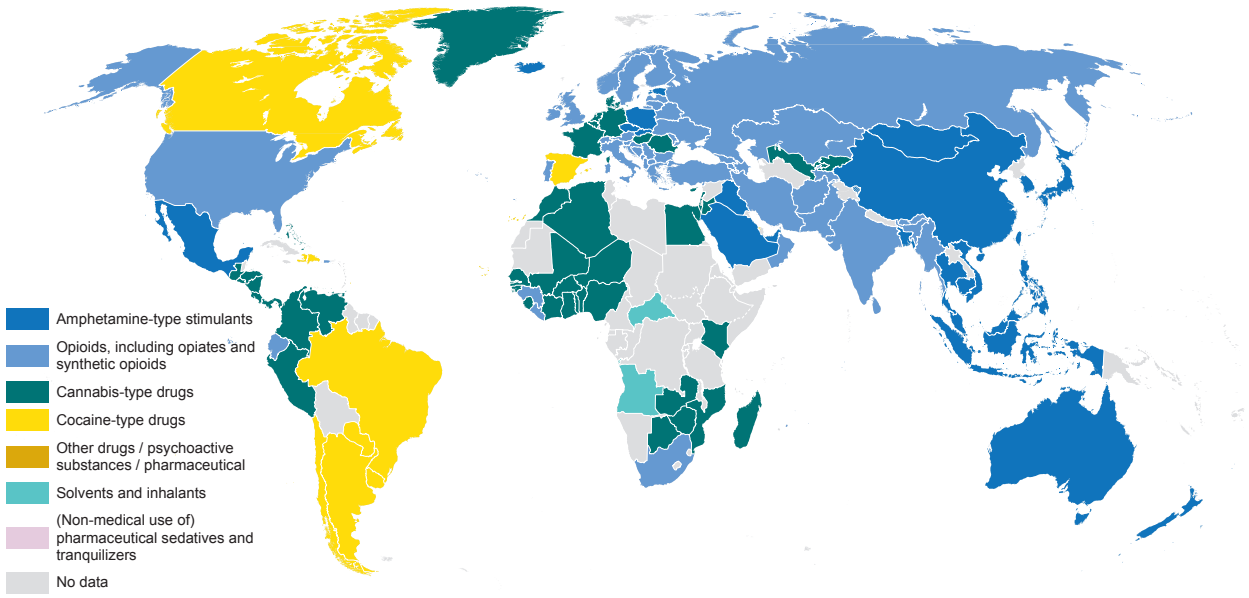
Some of the analysis in this chapter is based on qualitative assessments, with national experts providing their perception of the ranking of drugs according to the number of cases of drug use disorders, drug-related deaths and clients/people in drug treatment related to each drug. These assessments can be based on a wide range of data sources, ranging from rigorous prevalence studies to the use of small-scale studies and expert opinion. The interpretation of generalized global distribution of harm is limited by the fact that global and regional averages have not been weighted by national population sizes. The regional and global averages also are limited by data gaps because not all countries have reported relevant information.

The prevalence of drug use disorders expressed as an annual percentage of the global population appears to have remained relatively stable over the past 15 years.[n] The total number of individuals estimated to suffer from drug use disorders increased from about 27 million in 2010 to about 38.6 million in 2020. This is in a large part due to global population growth combined with improved data quality on prevalence.

Global estimates of drug use disorders are based on the best primary data available at the time of estimation, which may refer to a range of years. This means it is difficult to draw conclusions about trends in drug use disorders over time.

n The interpretation of a trend should also take into account the wide uncertainty intervals around the estimates, which overlap over the entire period analysed.

MAP 2 The most frequently reported drug group in drug treatment, 2020 or the most recent year for which data are available



Source: UNODC, responses to the annual report questionnaire.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Most drug use disorders relate to cannabis and opioids

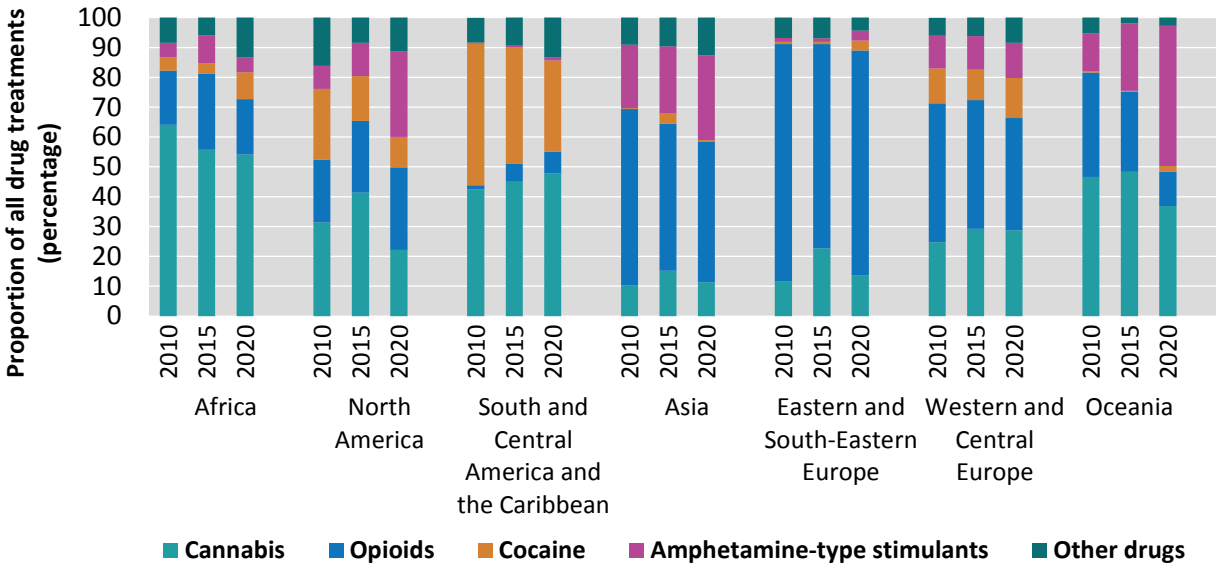
The consequences of drug use can be seen through different lenses, as different drug groups have varying prevalence of use and are associated with different harms. Qualitative assessments provided by national experts show that different drugs are associated with different types of harm. For example, cannabis, can be associated with high numbers of drug use disorders and treatment requests at national level, but it is rarely associated with direct drug-related mortality unlike opioids that is the drug group associated with the greatest number of deaths in most countries reporting to the UNODC.

Among the 68 countries with available data, the drug group most frequently identified as causing the greatest number of drug use disorders in the country was cannabis-type drugs, closely followed by opioids, mainly heroin. ATS were also mentioned often, in particular methamphetamine.

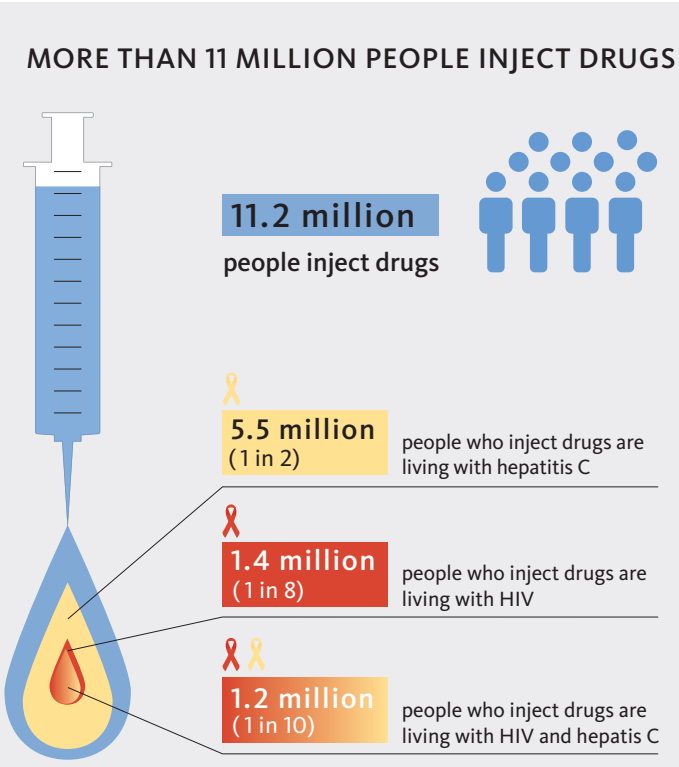
The ranking of which drug is reported to have caused the greatest number of drug use disorders in each country is determined mainly by two factors: prevalence of use and abuse liability. This can explain the high ranking of cannabis in drug use disorders and drug treatment. A recent study estimates that the chances of becoming dependent on cannabis after any lifetime exposure was 8.9 per cent for recreational users.[89] However, as cannabis is the most prevalent substance in most countries, it can cause a relatively high number of drug use disorders and related treatment requests, even though it has a relatively lower potential to create dependency.

There is clear regional variation with respect to the most common primary drug reported by people upon entering treatment. For example, in some African countries, cannabis is predominant, while in Eastern and South-Eastern Europe and in Asia, people are primarily in treatment for opioid use disorders. South and Central America and the Caribbean have the highest proportions of people in treatment due to use of

FIG. 8 Trends in primary drug of concern in people in treatment for drug use disorders



Source: UNODC, responses to the annual report questionnaire.



cocaine-type substances of all subregions. East and South-East Asia and Australia and New Zealand report seeing the highest proportion of users of ATS in treatment, particularly people who use methamphetamine.

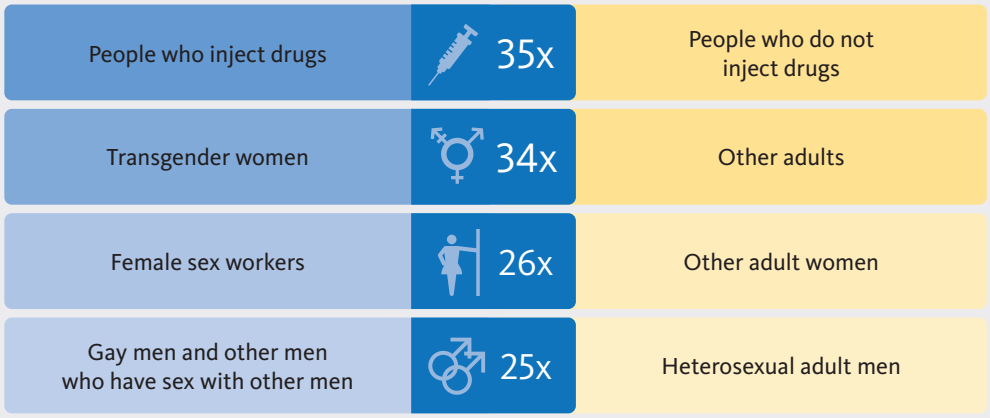
People who inject drugs continue to have a higher risk of living with HIV and hepatitis C

Given that injecting drugs is often a communal experience, PWID are susceptible to virus transmission through unsafe injecting practices such as the sharing of needles and syringes. A recent global systematic review estimates that 18 per cent of PWID engaged in receptive needle-syringe sharing at last injection, 24 per cent in the past month, and 33 per cent in the past year.[90]

Approximately one in eight people who inject drugs are living with HIV

HIV and hepatitis C continue to disproportionately affect PWID. The potential impact of the increased susceptibility of PWID to these diseases can impact

GREATER RISK OF ACQUIRING HIV IN 2020 AMONG KEY POPULATIONS



Source: UNODC elaboration, based on UNAIDS, Global AIDS Update 2021 – Confronting Inequalities — Lessons for Pandemic Responses from 40 Years of AIDS (Geneva, 2021).

the wider community, as there is the possibility of blood-borne, sexual or mother-to-child transmission.

PWID accounted for 9 per cent of new adult HIV infections worldwide in 2020, with the proportion rising to 20 per cent outside sub-Saharan Africa, where HIV disproportionately affects adolescent girls and young women.[91] UNODC, UNAIDS, WHO and the World Bank jointly estimated that in 2020 approximately one in every eight (12.4 per cent, down from 12.6 per cent in 2019) PWID worldwide were living with HIV, amounting to 1.4 million people.

The latest UNAIDS estimates suggest that in 2020, PWID had a risk of acquiring HIV that was 35 times greater than that of people who do not inject drugs.[92] This underlines the greater vulnerability of PWID to HIV infection than have other key population groups more likely to be exposed to HIV or to transmit it.[93, 94]

As a tool to monitor progress in the testing and treatment of HIV, UNAIDS established the 90-90-90 targets in 2014 with the aim that by 2020, 90 per cent of people living with HIV would know their HIV status, 90 per cent of those diagnosed would be receiving antiretroviral treatment, and 90 per cent of those receiving treatment would have achieved viral suppression.[95] The sub-population of PWID living with HIV seems to be particularly far from these targets as shown by a study in selected countries in Europe and Central Asia.[96]

Eastern Europe and South-West Asia continue to be the subregions with the highest estimated prevalence of HIV among PWID, with more than one in four PWID in those two regions living with HIV. According to UNAIDS, Eastern Europe and Central Asia (as defined geographically by UNAIDS) is the region with the world's fastest growing HIV epidemic, with the annual number of new adult HIV infections increasing by an estimated 43 per cent between 2010 and 2020. This is in contrast to a 31 per cent decline in the annual number of new adult HIV infections globally in the same period.[97]

Approximately half of people who inject drugs are living with hepatitis C

Injecting drug use also plays a significant role in perpetuating the global epidemic of hepatitis C, with WHO estimating that 23 per cent of new hepatitis C infections globally are attributable to this practice.[98]

The joint UNODC, WHO, UNAIDS and World Bank global estimate for 2020 shows a prevalence of 48.9 per cent of PWID living with hepatitis C, representing an estimated 5.5 million PWID living with hepatitis C. While this is down from the 2019 estimate of 50.2 per cent, any trend should be viewed with caution as methodologies to produce national or subnational estimates may have changed. Approximately 79 per cent of PWID living with hepatitis C reside in East and South-East Asia, Europe and North America. Hepatitis B is also a potentially life-threatening liver infection. However, unlike hepatitis C, hepatitis B can be prevented by vaccines that are safe and effective. The joint UNODC, WHO, UNAIDS and World Bank global estimate for 2020 of the prevalence of hepatitis B[o] among PWID is 7.9 per cent, meaning an estimated 0.9 million PWID worldwide are living with active hepatitis B infection.

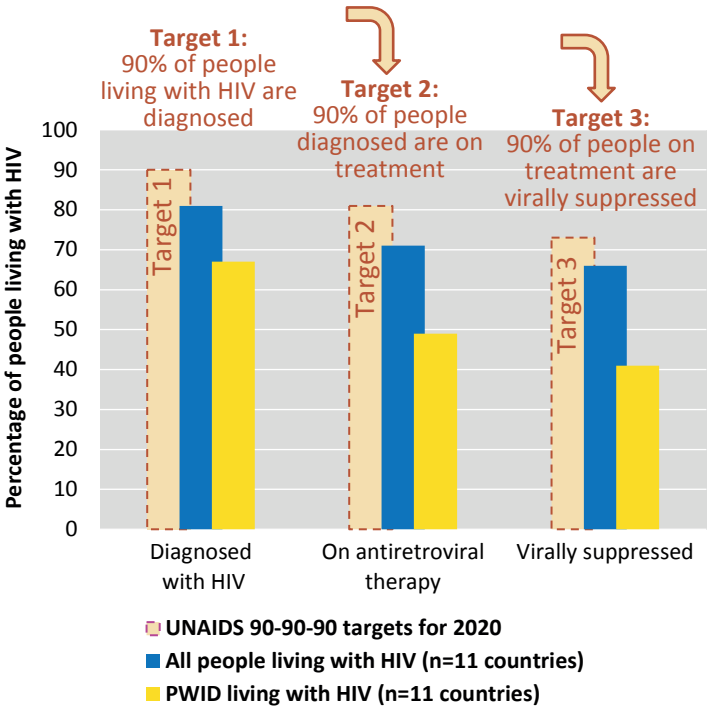
For PWID living with both HIV and hepatitis C, the presence of hepatitis C may complicate HIV treatment, and people living with HIV experience more rapid hepatitis C disease progression. Co-infection among PWID is very high, with an estimated 82 per cent of PWID living with HIV also living with hepatitis C.[99] This equates to approximately 10 per cent of PWID worldwide, or 1.1 million people.

Deaths associated with drug use continue to increase

Within the total number of deaths attributed to drug use, there is an important distinction: deaths directly related to drug use disorders, mainly overdoses, and deaths indirectly related to drug use, for example, liver cancer or cirrhosis due to hepatitis or HIV, or self-harm associated with drug use. Both direct and indirect mortality related to drugs vary substantially by drug type, region, age and other factors.

The most comprehensive and timely data on global deaths attributed to drug use are produced by the Global Burden of Disease Study, which estimated that there were 494,000 drug-related deaths in 2019. The latest time series indicates an overall increase in total deaths attributed to drugs of 17.5 per cent between 2009 and 2019[100] – see the *World Drug Report 2021* for more details.[101]

FIG. 9 **HIV care (diagnoses, treatment, viral suppression) among PWID and the general population living with HIV, compared with UNAIDS 2020 targets, selected countries in Europe and Central Asia, 2020**



Source: European Centre for Disease Prevention and Control, 'HIV Continuum of Care. Monitoring Implementation of the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2020 Progress Report' (Stockholm, 2021).

Note: Countries included are Austria, Czechia, France, Kazakhstan, Kyrgyzstan, Luxembourg, Poland, Romania, Spain, Ukraine and United Kingdom.

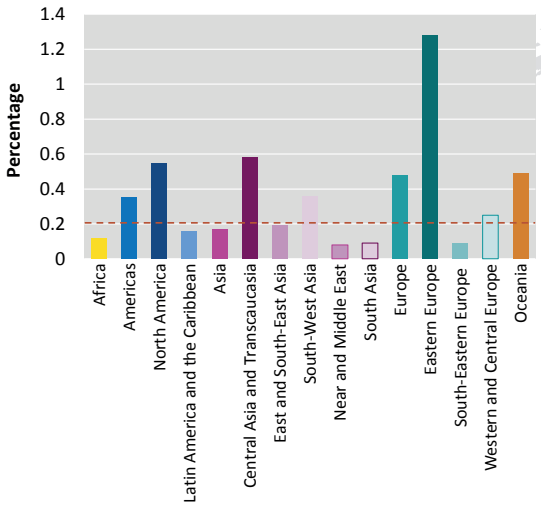
Opioids are the leading cause of death in fatal overdoses

According to qualitative and quantitative information reported by Member States to the UNODC, the drug group associated with the highest drug-related mortality is by far opioids, in particular among PWID. Of the 48 countries reporting qualitative assessments,[p]

o The prevalence estimate for hepatitis B is intended to refer to active infection (HBsAg), rather than anti-HBc, which indicates previous exposure. However, it is not always possible to differentiate that in the data reported to UNODC.

p A caveat of this analysis is that some regions and subregions are poorly covered due to missing data collection systems on drug-related mortality and thus this result is not necessarily globally representative. Only seven Asian countries, many of

FIG. 10 Prevalence of people who inject drugs, 2020



Number of people who inject drugs, 2020

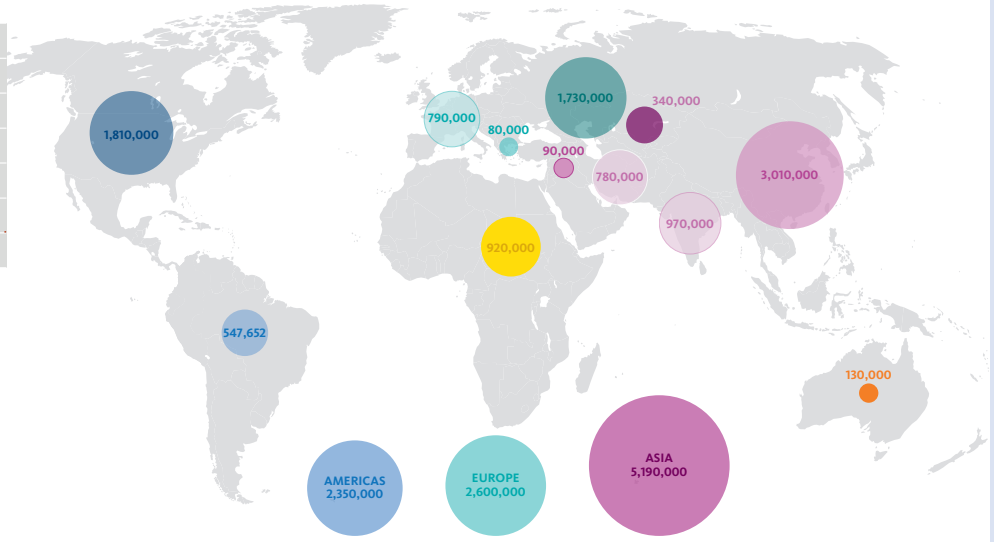
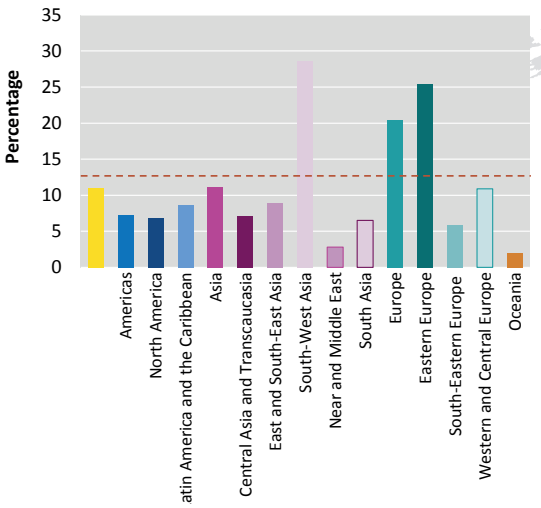
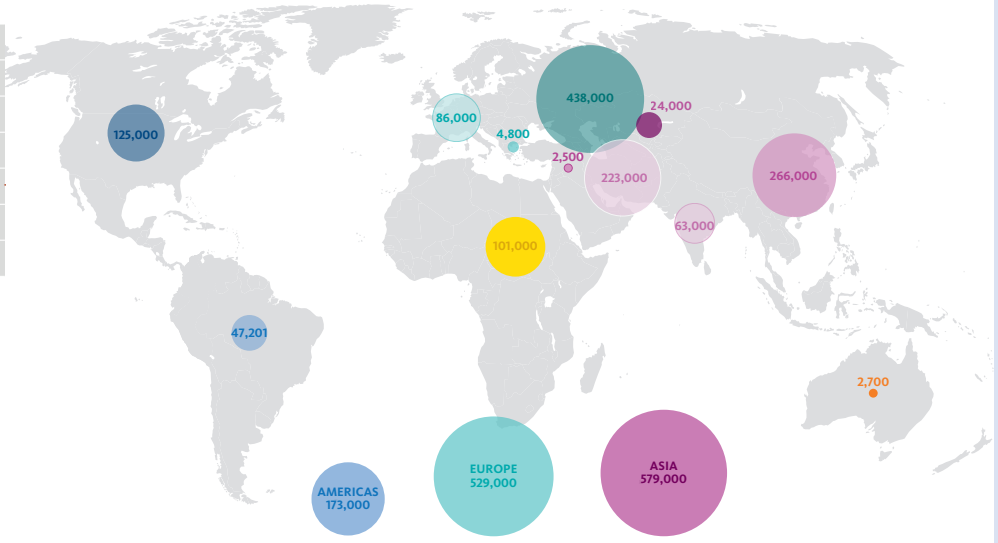


FIG. 11 Prevalence of HIV among people who inject drugs, 2020



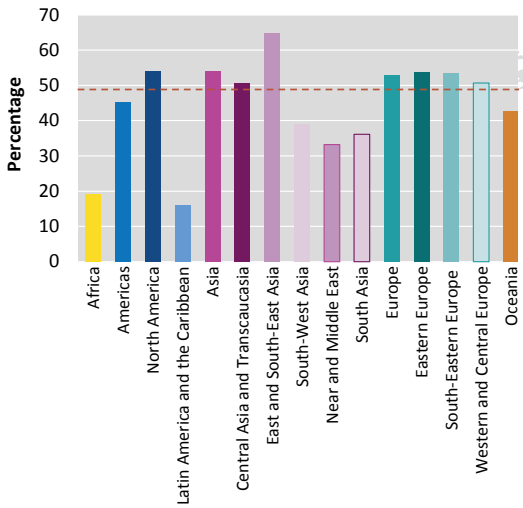
Number of people who inject drugs living with HIV, 2020



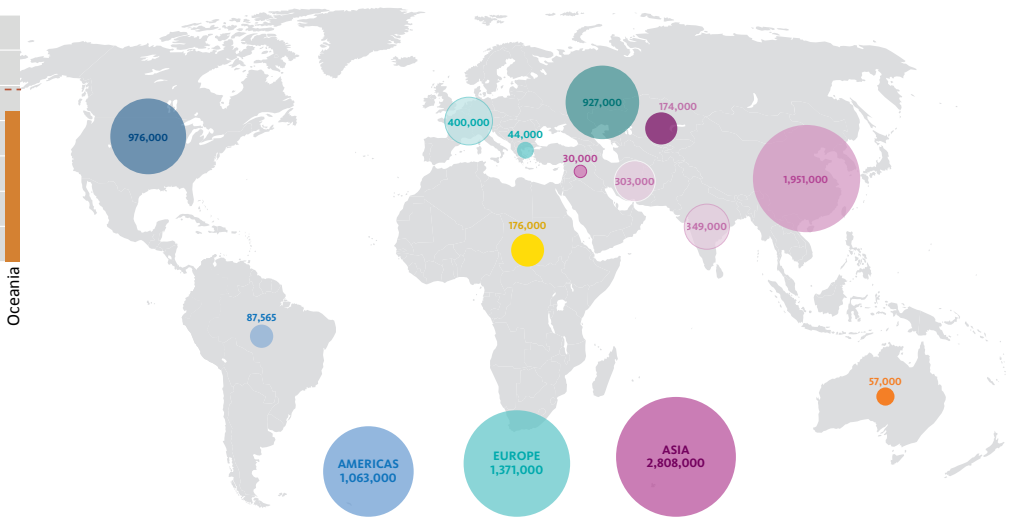
Sources: UNODC, responses to the annual report questionnaire; progress reports of UNAIDS on the global AIDS response (various years); the former Reference Group to the United Nations on HIV and injecting drug use; and published peer-reviewed articles and government reports.

Note: The dashed line represents the global average.

FIG. 12 Prevalence of HCV among people who inject drugs, 2020



Number of people who inject drugs living with hepatitis C, 2020



Sources: UNODC, responses to the annual report questionnaire; progress reports of UNAIDS on the global AIDS response (various years); the former Reference Group to the United Nations on HIV and injecting drug use; and published peer-reviewed articles and government reports.

Note: The dashed line represents the global average.

77 per cent indicated that opioids (most frequently heroin/morphine) were the substance group causing the greatest number of direct drug-related deaths in their countries. In terms of data on deaths, 64 per cent of all direct drug-related death cases reported to UNODC were in relation to opioids.[q] Opioids were present in 75 per cent of fatal overdoses in the United States in 2020[102] and in 76 per cent in the European Union in 2019.[103] More potent opioids, such as fentanyls, are associated with higher risks.[104, r]

Eleven per cent of countries reported stimulant drugs (ATS or cocaine-type substances) as the drug group causing the greatest number of drug-related deaths.[s] Other substances were rarely mentioned as the leading cause of direct drug-related deaths.

There is considerable regional variation in the prevalence of direct drug-related mortality among the general population. While the European Union reported 14.8 deaths due to drug overdose per 1 million population aged 15–64 in 2019,[105] the United States reported an age-adjusted mortality of 216 per 1 million population for the same age bracket in the same year.[106] A study conducted in 2015 and 2016 in the Islamic Republic of Iran estimated a rate of mortality due to "opiate and psychotropic abuse" of 38.2 per 1 million population.[107]

which may have higher prevalence of methamphetamine use than opioid use and thus experience harms related to this substance, reported data. African countries are also underrepresented in this analysis, with four reporting data. Six countries from the Americas (excluding the United States) provided data used in the analysis, as did 30 countries from Europe and Australia.

q Fifty-five countries reported recent statistics (2020 or most recent year for which data is available) on cases of direct drug-related deaths. Out of them, 30 were able to provide complete toxicological results about almost 11,000 direct drug-related deaths. While the reporting coverage and exact methods and definitions may vary among countries, the distribution of cases can be informative.

r See also booklet 3 of the present report, entitled *Drug Market Trends: Opioids, Cannabis*.

s Based on responses to the qualitative questions of the annual report questionnaire.

Considerable increases in some countries drive overall global number of drug-related deaths upwards

Qualitative assessments by Member States indicate that most countries experienced a relatively stable situation in direct opioid-related deaths in 2020, with some reporting decreases. However, this trend was not universal, and Belarus, Brazil, Canada, Greece, Kenya, Norway, Ukraine, and the United States all reported increases of more than 10 per cent.

The figure for the United States was especially high, with an increase in drug overdose deaths of more than 30 per cent between 2019 and 2020, reaching a record high of around 93,000 deaths[t], largely driven by opioids, in particular synthetic opioids such as fentanyl.[108, u] Canada also witnessed a record high number of unintentional opioid-related fatal overdoses in 2020, following the introduction of a national monitoring system. Increases in post-mortem findings of fentanyl and stimulants were confirmed in a study conducted in Ontario.[109]

In contrast to the numbers in North America, European countries saw an overall stable situation in drug-related deaths in 2020.[110] In addition, Estonia reported that a long-term high prevalence of fentanyl-related deaths has recently ceased, although people could be dying from other opioids.[111]

However, there were exceptions in Europe. Belarus reported an increase in direct drug-related mortality in 2020, mainly related to polysubstance use and the presence of illicitly manufactured methadone on the black market.[112] Finland reported an increase in the deaths related to buprenorphine and in the proportion of young people dying of overdose[113] and a number of deaths in which gabapentoids (pregabalin and gabapentin) were detected, mainly in the context of polydrug use with opioids.[114] Gabapentoids potentiate the effects of opioids, increasing the risk of fatal overdose. People who use gabapentoids alongside opioids typically use them without a doctor's prescription, likely self-medicating withdrawal symptoms or using the drug to induce euphoria and relaxation.[115]

Overall, deaths directly related to cocaine-type drugs were stable according to the available qualitative information although Germany, Kenya, and the United Kingdom reported significant increases. The United Kingdom confirmed a longer-term trend of increases in the proportion of cocaine-related drug-induced deaths that began in 2010 and which accounted for one quarter of drug-related deaths in 2019. Opioid-related deaths in the United Kingdom also increased.[116]

In Hungary, new psychoactive substances, in particular synthetic cannabinoid receptor agonists ("SCRAs"), continue to be predominant in direct drug-related deaths,[117] while Mexico reported amphetamines had recently become the most frequently detected drug in the deceased[118] within the context of an overall increase in direct drug-related deaths.

Even excluding fatal overdoses, people who use drugs have a higher mortality rate than the general population

Overall, deaths among younger people who use drugs are more likely to be attributable to overdose, while older people who use drugs are more likely to die from somatic causes[119] often linked to long-term health harms from drug use.

Studies analysing mortality of people who use drugs from causes other than overdose are scarce. A multi-site study carried out across several European countries, in which cohorts of people who use drugs were followed over time to determine their mortality risk and causes offers some insights, although it remains geographically limited in scope. The study estimates that people engaging in high-risk drug use have mortality rates that are 10–20 times higher than the general population of the corresponding age and gender.[120] Although men who use drugs and older users have higher crude mortality rates, excess mortality of people using drugs compared with the general population is typically higher among women and young users, mostly because these groups have relatively low baseline mortality rates. Overall, the most frequent causes of death among people who use drugs are somatic causes, followed by fatal overdose.[121]

t Some cases were still pending investigation at the time of publication, 92,478 cases were confirmed and 93,655 predicted based on the available information.

u See also booklet 3 of the present report, entitled *Drug Market Trends: Opioids, Cannabis*.

Patterns of causes of deaths among people who use drugs also show regional variation. For example, in countries or regions with a high HIV prevalence among PWID, AIDS is often a major cause of death, but in PWID in low HIV-prevalence countries, overdose, suicide and trauma play a greater role.[122]

Harm associated with drug use continues to increase

Deaths attributed to drug use disorders (mostly opioid use disorders) have increased sharply between 2010-2019, at a rate greater than the increase in the number of people who use drugs or of those with drug use disorders. This might reflect the use and, in particular, injection of opioids such as fentanyls in some regions, which makes people who use opioids more vulnerable to overdose and death. More positively, the past decade has seen a decline in deaths attributed to HIV and AIDS among people who use drugs. According to the study, in 2019, an estimated 494,000 deaths and 30.9 million years of "healthy" life lost as a result of premature death and disability were attributable to the use of drugs.[123] Reductions in the number of such deaths among all people living with HIV (not only those who use drugs) have largely been driven by the scale-up of treatment.[124]

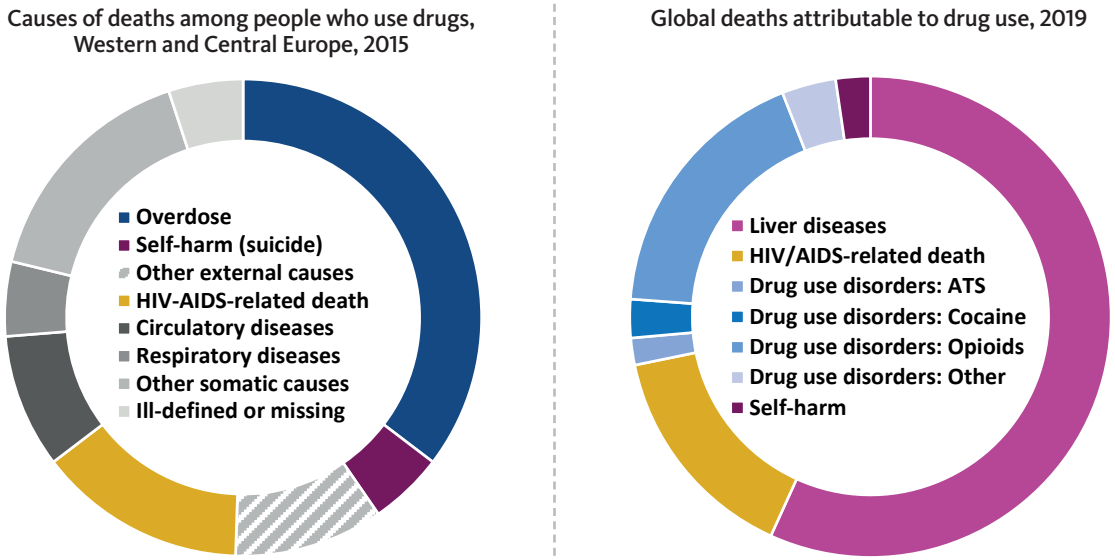
Non-medical opioid use leads to increased risk of dependence, mortality and other health harms

The drug groups causing the highest levels of health harm in terms of deaths and DALYs continues to be opioids[125]. The exact levels of harm vary and depend on many factors, both individual factors such as age of initiation[126] and genetic vulnerability,[127] and external factors such as availability and purity of opioids, availability and quality of services or interventions to treat drug dependence and prevent drug-related infectious diseases and deaths.

Initiation to non-medical opioid use can bring the following:

- **Progression to regular use and drug use disorders**

FIG. 13 Causes of death related to drugs



Source: EMCDDA, Mortality among Drug Users in Europe: New and Old Challenges for Public Health; and Institute for Health Metrics and Evaluation (IHME), "Global Burden of Disease Study 2020".

Note: The two studies presented on the graphs used different methodology and thus are not directly comparable. EMCDDA study is based on pooled analysis of cohorts of high-risk drug users in European countries, while IHME modelling study uses parameters from research to model global distribution of causes of deaths among people who use drugs.

- While the risk of becoming dependent is very low for people who take opioids under medical advice such as pain patients (0.2 per cent in persons with no previous history of addiction),[128, 129] the risk increases for people who use opioids non-medically.
- According to studies, 7.5 per cent of non-medical users of analgesics can develop dependence and from 21.1[130] to 23.1 per cent[131] of people who have ever used opiates can progress to dependence.
- 46.6 per cent of people who use opioids can develop opioid use disorders.[132] The length of time required to do so may vary, but studies consistently show that about half of people who engage in high-risk opioid use who will ever develop an opioid use disorder will do so within two years.[133]
- People who use opioids non-medically may progress – at varying rates – to injecting use, which can further aggravate the risks of infectious diseases and overdose deaths. The rate of that progression was estimated to vary between 40 and 90 per cent among youth with opioid use disorders in the United States.[134]
- The prevalence of injecting opioids differs widely between countries. For instance, in Europe, among new patients entering treatment for heroin use, the rate of injecting was as low as 10 per cent in Denmark.[135] Transitions away from injection also occur and in some European countries are significant.[136]
- Long-term studies confirm the neuroscience view of opioid use disorder as a chronic and relapsing condition. Long-term treatment retention improves outcomes, while incarceration has a detrimental effect.[137] Fewer than a third of people who use opioids followed up in a study for 10–30 years were able to cease the use of their primary drug.[138] However, this percentage was substantially improved with substitution treatment.[139]

Risk of death and overdose

- Premature death is a significant risk, and about quarter to half of all people who use opioids followed up in the study were deceased after 20 years.[140] However, mortality rates seem to have decreased after 2000, likely because of improved drug treatment services and other more recently available interventions.
- People with drug use disorders have in general a high prevalence of personally experiencing a non-fatal overdose, according to a systematic review: 45.4 per cent (a range of 16.6 to 68.0 per cent).[141]

Risk of contracting life-threatening diseases

- For people who inject opioids, the risk of contracting hepatitis C is considerable. Studies in the United States and Europe show that most become infected within two years of commencing drug injection.[142]
- Some PWID contract HIV, but the risks vary depending on background prevalence of HIV and sexual behaviour, as well as risky injecting practices such as needle-sharing.

Other somatic risks

- Other health risks associated with non-medical use of opioids include opioid-induced bowel syndrome, opioid-induced hyperalgesia, opioid-associated liver fibrosis, opioid-related leukoencephalopathy and opioid-associated amnestic syndrome.[143]

Access to treatment

- A local study in Zurich documented that in optimal conditions (relatively high availability of drug-related treatment and relatively low levels of stigma), about half of all people who use heroin enter drug treatment within two years of onset of use. However, the distribution of lag to treatment has a very long right tail, which means that there will be individuals who will enter treatment much later.[144]

Responses to drug use: strategies, policies, and interventions

Countries respond in several ways to health and social problems stemming from drug use, especially those caused by intensive use and drug use disorders. They

MAIN HEALTH CONSEQUENCES OF NON-MEDICAL OPIOID USE

People who use opioids for non-medical purposes

After 2 years (median)
(Australian and US studies)

Within 1 or 2 further years (median)
(Australian and US studies)

Between 10-90% will progress to injecting use and will transition in and out of injecting.
(studies from US and Europe)

Contracting hepatitis C
(about half of PWID, global estimate)

If untreated, liver damage, liver failure, cirrhosis, liver cancer, and even death may follow.

Some users will contract HIV
(12.4% of PWID, global estimate)

Almost half of users will develop opioid use disorders and over 20% will develop dependence syndrome.
(Australian and US studies)

In an optimal situation, users will enter treatment at this stage and circle in and out of treatment seeking improvement in their state.
(based on Zurich study)

Almost half of users will personally experience non-fatal overdose and many more may witness one in a fellow user.
(systematic review)

About a third of users will cease the non-medical use of opioids within 30 years. Substitution treatment improves outcomes, incarceration worsens them.
(review of literature)

Opioid users may experience other somatic risks, for example: opioid-induced bowel syndrome, opioid-induced hyperalgesia, opioid-associated liver fibrosis, opioid-related leukoencephalopathy and opioid amnestic syndrome.
(review of literature)

PREMATURE DEATH

Mortality rate is about 10-20 times higher in opioid users than among the general population of the corresponding age and sex. A quarter to half of opioid users followed up for 20 years were deceased at that time.

(European study, review of literature)

employ measures aimed at preventing the onset of drug use and use different approaches to reduce existing drug use, drug-related mortality and morbidity and other consequences of drug use.

The present section, based mainly on the UNODC annual report questionnaire, aims to provide insight into some of the approaches taken by countries in relation to prevention and treatment of drug use and the prevention of drug-related mortality and morbidity.

Prevention of drug use

Prevention of drug use seeks to help avoid or delay the initiation of drug use, or, if use has already been initiated, to avert the development of drug use disorders.[145] While effective prevention can save significant financial and societal resources,[146] no programme can be successfully implemented in isolation.

Prevention can be based on universal or targeted approaches and typically uses three types of key components[v]: environmental (such as protective school climates),[147] developmental (such as social skills),[148] and informational (such as warnings of risk).[149] Use of electronic and online tools is also increasing.[150, 151, 152, 153]

Prevention policies are commonplace in countries, but accreditation standards are often missing

United Nations Member States, in 2015, committed to achieve Sustainable Development Goals by 2030 and under target 3.5 pledged to strengthen the prevention and treatment of substance abuse. By 2020, 78 of 86 responding Member States had reported having in place a policy on the prevention of drug use. Most also reported national monitoring of implementation of prevention policies. However, accreditation systems for drug prevention programmes are less common. This information may be biased by the high rate of non-responding countries that could be less likely to have such policies or some of their components in place.

Prevention of drug-related infectious diseases and drug-related deaths

In 2016, the World Health Assembly adopted the global health sector strategy on viral hepatitis. It calls for the elimination of viral hepatitis C infection as a public health problem, with the target, inter alia, of an 80 per cent reduction in incidence by 2030 and an interim target of a 30 per cent reduction by 2020, as measured against the 2015 baseline.[154]

While Europe is home to an estimated 25 per cent of tested PWID living with hepatitis C worldwide, recent analysis conducted by EMCDDA showed that no country in the European Union or Norway or Turkey had evidence of a significant reduction in hepatitis C transmission among PWID between 2015 and 2019.[155] The coverage of needle-syringe programmes and opioid substitution treatment to help prevent hepatitis C and HIV remains suboptimal in many European countries.[156] Many hepatitis C infections among PWID go undiagnosed and therefore untreated. In 2019, 12 countries reported that less than half of PWID entering drug treatment had been tested for hepatitis C in the previous 12 months, with nine countries reporting over 50 per cent. Furthermore, access to novel, highly effective, direct-acting antiviral treatment, which not only improves quality of life but also prevents onward transmission, remains restricted in some countries of the European Union. In 2019, seven countries still imposed barriers to access to direct-acting antiviral agents for PWID (such as enrolment in opioid substitution treatment and/or abstinence from drug use).[157]

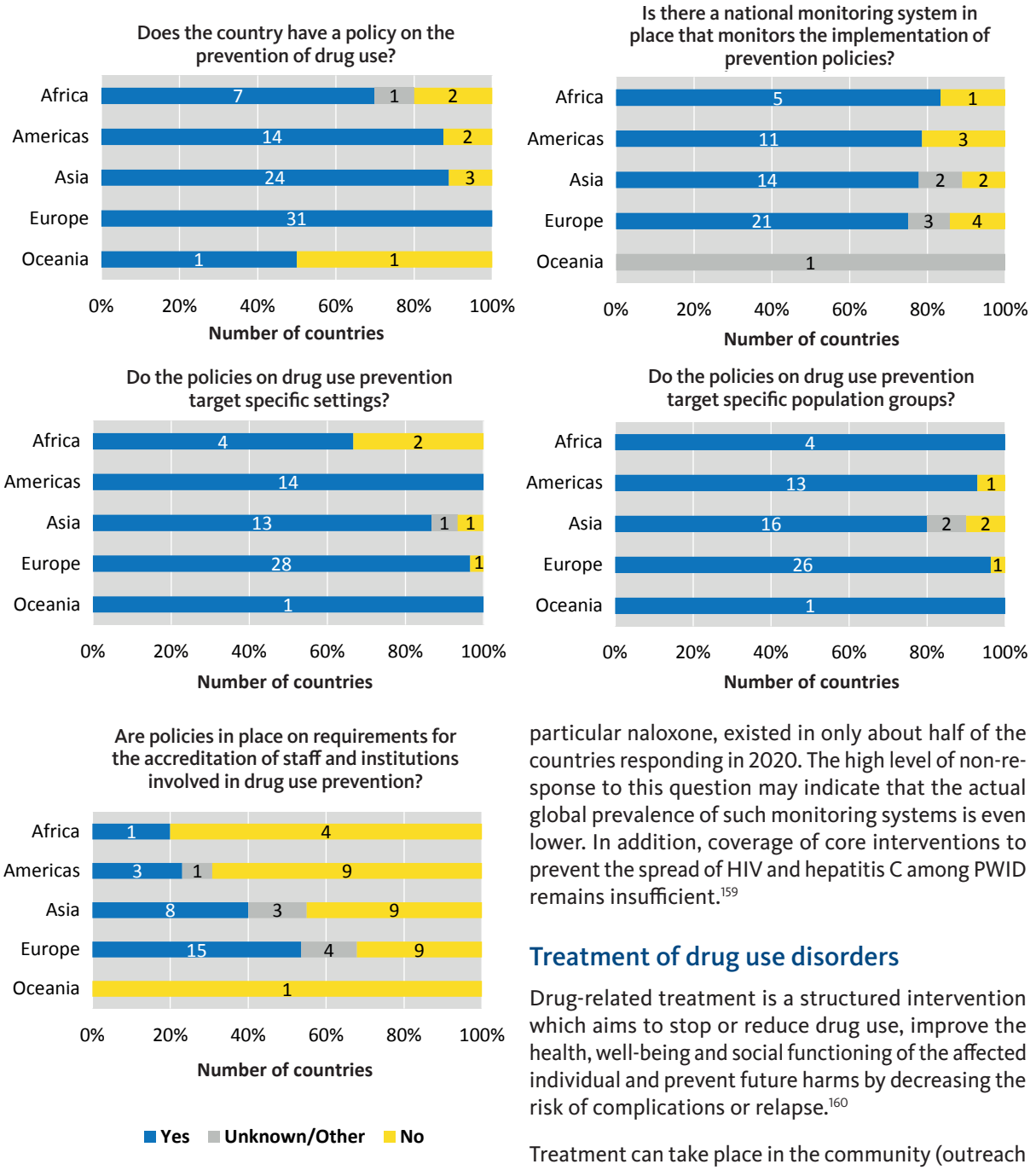
Lack of monitoring and policy support for key interventions weaken strategies for preventing drug-related infectious diseases and deaths

Most countries that provided information to UNODC indicated that their national policies and strategies related to the prevention of drug-related infectious diseases include interventions which are in line with the WHO, UNODC, UNAIDS Technical Guide.[158] However, the legislation of several countries does not include provisions on needle-syringe programmes.

A total of 36 of 46 responding countries reported having a system in place to monitor drug-related deaths. However, only about half (22 out of 42) of the responding countries monitor non-fatal drug overdoses. Standard operating procedures on treatment protocols for non-fatal overdoses and standard operating procedures on the administration of and/or access to agonists to prevent drug-related deaths, in

v More information on prevention can be found in the UNODC *International Standards on Drug Use Prevention.*

FIG. 14 Description of national policies for drug use prevention, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: 65–86 countries responded to each question.

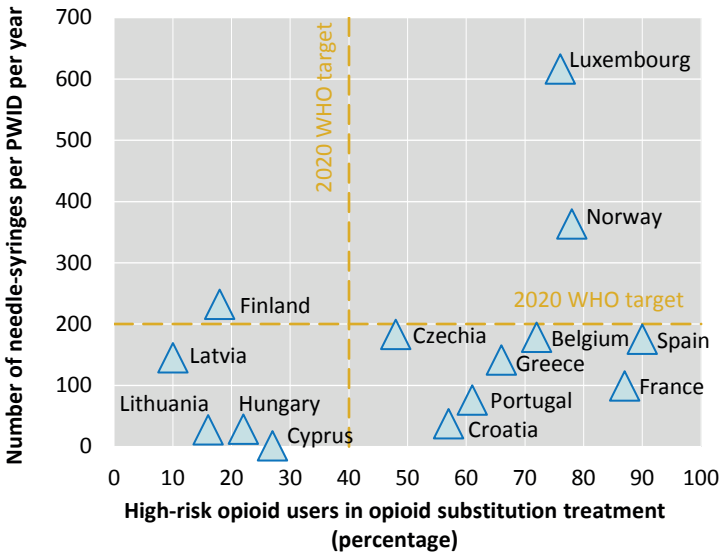
particular naloxone, existed in only about half of the countries responding in 2020. The high level of non-response to this question may indicate that the actual global prevalence of such monitoring systems is even lower. In addition, coverage of core interventions to prevent the spread of HIV and hepatitis C among PWID remains insufficient.[159]

Treatment of drug use disorders

Drug-related treatment is a structured intervention which aims to stop or reduce drug use, improve the health, well-being and social functioning of the affected individual and prevent future harms by decreasing the risk of complications or relapse.[160]

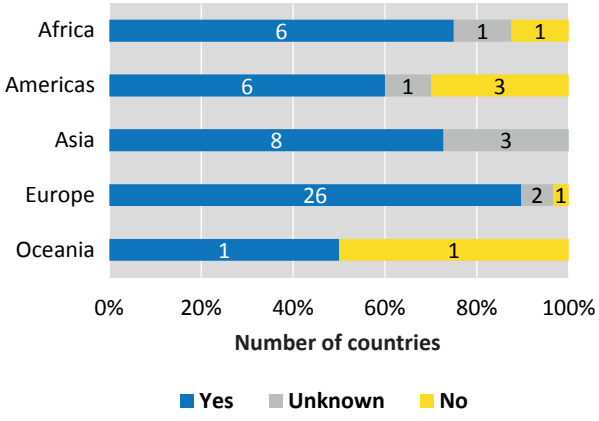
Treatment can take place in the community (outreach services), general health-care facilities (e.g. general hospitals) or specialized outpatient, short-term inpatient settings (e.g. detoxification units) or long-term or residential treatment.

FIG. 15 Number of needle-syringes distributed per PWID per year and proportion of high-risk users of opioids in opioid substitution treatment, selected countries in Europe, 2019 or latest year available



Source: UNODC, responses to the annual report questionnaire; and EMCDDA, Elimination barometer on viral hepatitis among people who inject drugs in Europe (available at www.emcdda.europa.eu/publications/html/viral-hepatitis-elimination-barometer_en) (updated: July 2021).

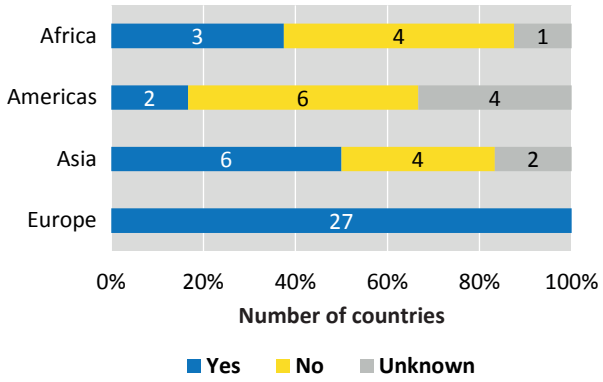
FIG. 16 Inclusion of preventive interventions to prevent drug-related infectious diseases in line with the *WHO, UNODC, UNAIDS Technical Guide* in national policies, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: Responses of 60 countries.

FIG. 17 Provisions for needle and syringe programmes in national legislation, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: responses of 59 countries.

Scientific evidence-based treatment modalities for drug use disorders include pharmacological treatment (such as treatment of withdrawal), psychosocial interventions (such as counselling and behavioural therapy) and rehabilitation and aftercare.

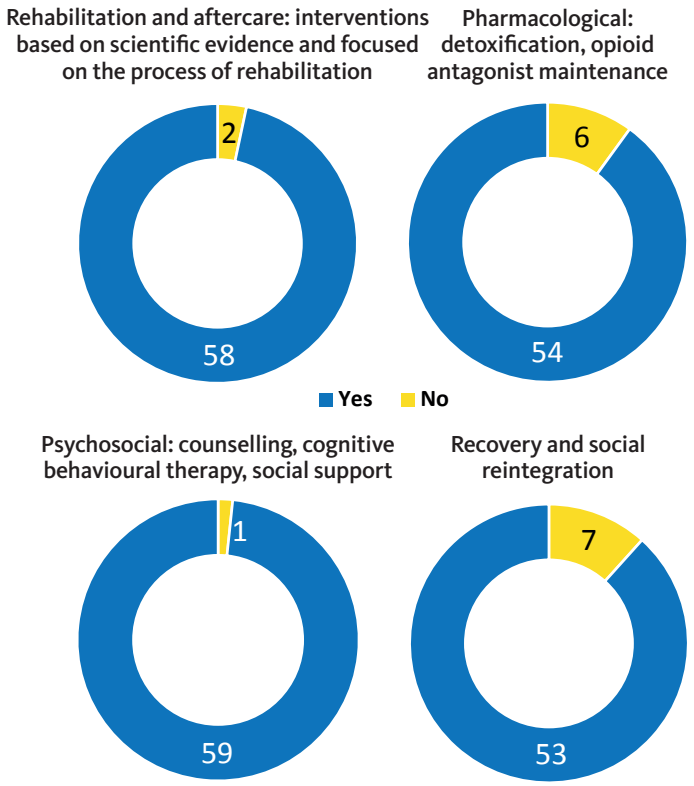
Treatment is a key pillar in national drug policies, but standard operating procedures are often lacking

Indicator 3.5.1 of the Sustainable Development Goals relates to the strengthening of drug-related treatment. Virtually all responding countries have a policy on drug-related treatment in place, and most consider it a key pillar of their drug strategies and policies. Under these policies, pharmacological and psychosocial treatment, rehabilitation and aftercare, and recovery and reintegration are covered by most countries. However, this is not universal.

Affordability of treatment varies. In most responding countries, drug-related treatment is covered by the public health-care system, but reliance on non-governmental organizations, the private sector or the criminal justice system also exists.[161] Systems in which the patient bears the entire cost of treatment exist, although only in a few countries.

Most responding countries monitor the provision of treatment interventions, but standard operating procedures are not available everywhere.

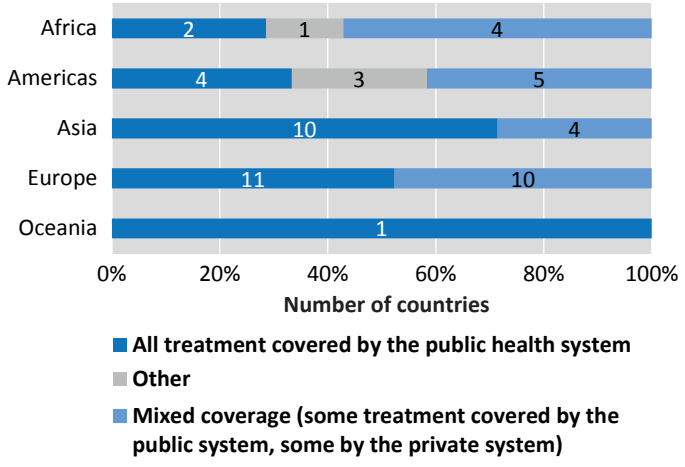
FIG. 18 Coverage of drug-related treatment modalities in national strategies and policies, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: Responses of 60 countries.

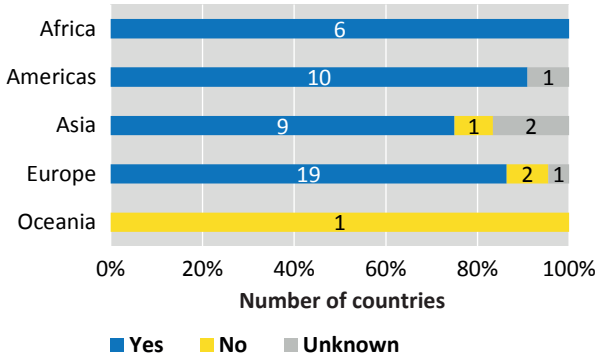
FIG. 19 Funding coverage of treatment services,2020



Source: UNODC, responses to the annual report questionnaire.

Note: Responses of 55 countries.

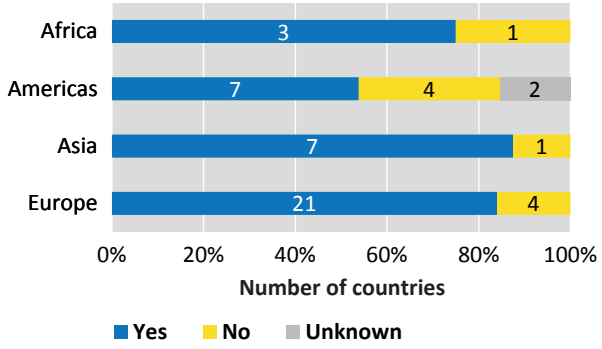
FIG. 20 Mechanisms in place to map available interventions and/or monitor treatment interventions, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: Responses of 52 countries.

FIG. 21 Standard operating procedures on treatment interventions and on assessing their quality, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: Responses of 50 countries.

Gaps exist in availability and provision of rehabilitation and pharmacological treatment, and in coverage and accessibility overall

The main forms of drug-related treatment are available in most countries. However, limited coverage and especially limited accessibility exist in several countries.

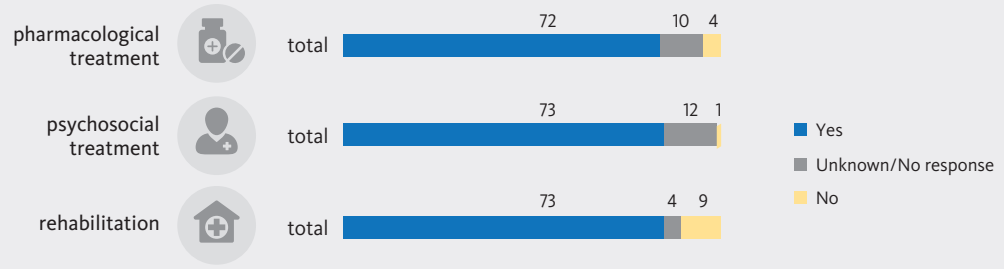
Underrepresentation of women in treatment

In the period 2015–2019, an estimated minimum of 7 million[w] people with drug use disorders worldwide

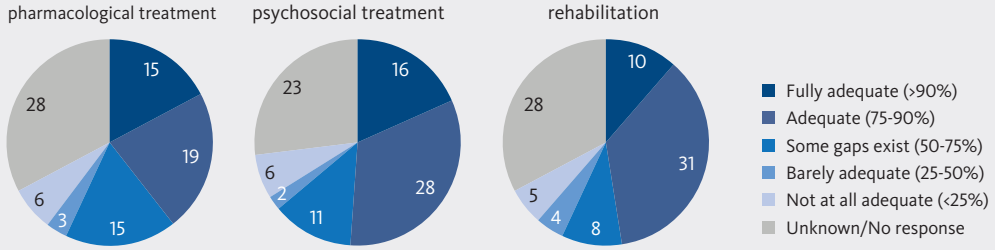
w This initial estimate should be considered a lower boundary of the number of treated patients/clients due to drug use disorders.

AVAILABILITY, COVERAGE AND ACCESSIBILITY OF KEY DRUG-RELATED TREATMENT INTERVENTIONS

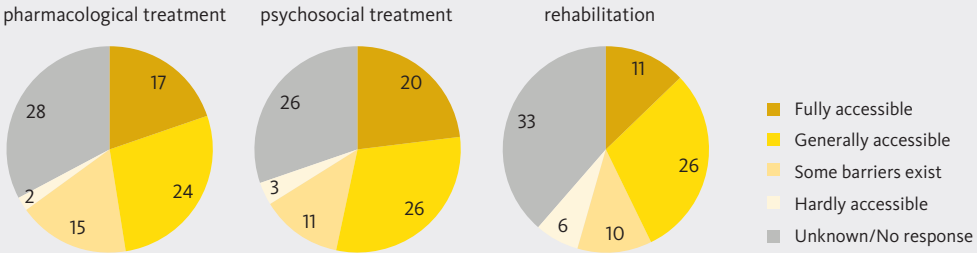
Availability of pharmacological treatment, psychosocial treatment, rehabilitation



Coverage of pharmacological treatment, psychosocial treatment, rehabilitation



Accessibility of pharmacological treatment, psychosocial treatment, rehabilitation



Source: UNODC, responses to the annual report questionnaire.

received drug-related treatment each year. This means that of the number of people with drug use disorders, about one in five received treatment.[x]

x This ration needs to be interpreted carefully, because it is based on estimates. Moreover, it is not comparable with ratios published previously, owing to methodological differences and improved data coverage.

Aggregated data on people in drug treatment referring to 2020 were available from 50 countries, describing the treatment of over 600,000 people with drug use disorders. As these are just a small fraction of all people in drug treatment worldwide, conclusions at a global level cannot be made. However, data presented in the analysis below can provide certain insight into the

characteristics of people in drug treatment in different regions based on those data.

Of those 600,000 people with drug use disorders treated in 2020, less than 20 per cent were women.[y] This proportion varies substantially by region, reflecting several factors including prevalence of substance use disorders among men and women, but also availability and accessibility of treatment, and stigmas and additional barriers to treatment women may face.[162] As treatment services are primarily designed to serve the majority of their patients, which are men, they may fail to adequately respond to the needs of female patients.

The proportion of people in treatment who are women also varies by substance, but for almost all substances, the proportion of women treated was in 2020 lower than the proportion of women who used the substance in the past year,[z] suggesting that women may be under-represented in drug treatment. In addition to under-representation, other factors may explain the lower share of women in drug treatment, possibly including a lower frequency of use compared to men.

People in drug treatment are younger in Africa and the Americas, as are those in treatment for cannabis and ATS as the primary drug

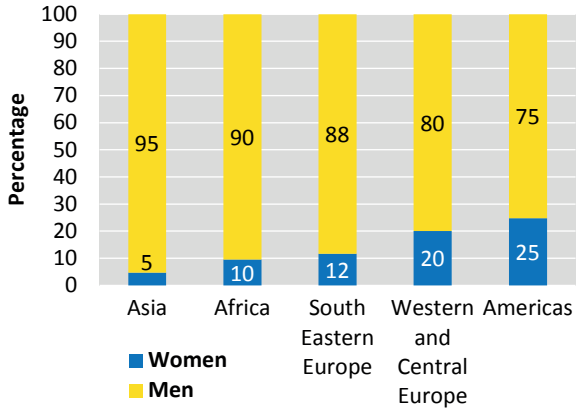
The global average age of recently treated individuals was approximately 35, with the lowest average age in Africa and the Americas at around 30. People in drug treatment in Asia were around 36 years old on average and Europe had the oldest average age at 38.5. These figures are in part determined by the age structure in each region, but also by the age groups most affected by drug use disorders.

The proportion of young people with drug use disorders (below 35 years of age) in drug-related treatment varies substantially by region, as young people constitute a clear majority in Africa and the Americas, but a minority in Europe.

y Based on pooled analysis of the data reported in the 2021 reporting cycle.

z See also *Distribution of people who use drugs* in the present booklet for more details.

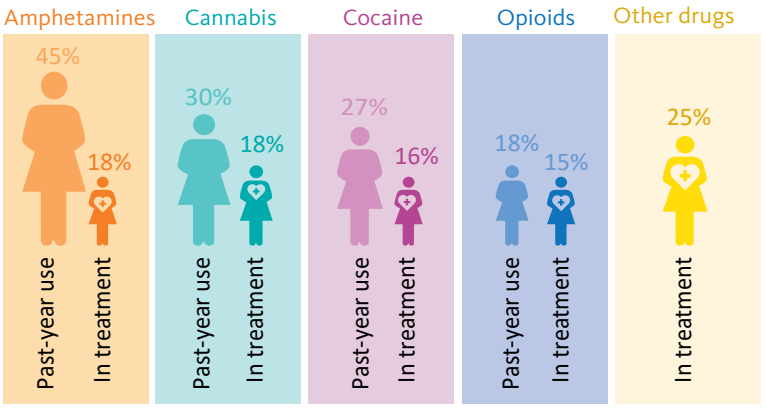
FIG. 22 Distribution of women and men among all people in drug-related treatment, by region and selected subregions, 2020



Source: UNODC, responses to the annual report questionnaire.

Note: based on data from 46 countries.

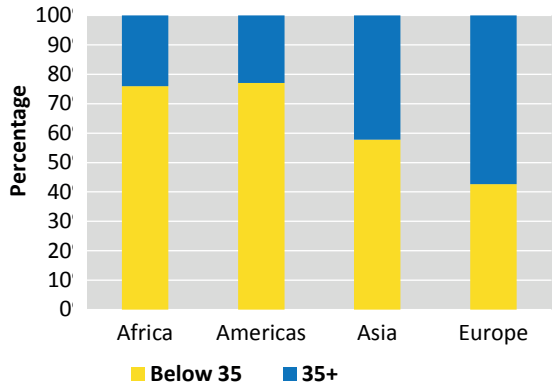
FIG. 23 Proportion of men and women among clients/patients in drug-related treatment, by primary drug and past-year drug use, 2020



Source: UNODC, responses to the annual report questionnaire.

The average age of the sample of treated individuals also varies according to substance of use. People with cannabis use disorders in treatment were on average about 27 years old, people using ATS as their primary drug were 31 on average, people using cocaine were 38 on average, and people who use opioids were the oldest at 42.5 years.

FIG. 24 Distribution of people below 35 years old in drug-related treatment, by region (2020)



Source: UNODC, responses to the annual report questionnaire.

Pandemic reduces accessibility of drug-related interventions

The COVID-19 pandemic hampered drug-related interventions and the impact on service provision was consistent and characterized by widespread disruptions in virtually all types of services, typically, but not always, leading to drops in attendance or in the number of individuals reached by programmes and interventions.

Pandemic disrupted provision of drug treatment services

While data on drug treatment provision during the pandemic remain limited and patchy, due partly to the interruption of data flows, the available information suggests an overall decline in the provision of drug treatment. Among the 28 countries which provided data about the number of people in drug treatment in 2020 and 2019 or 2018, 19 countries reported a decrease in 2020 of more than 5 per cent.[aa] This likely implies a widening gap between drug treatment need and actual treatment provision, which may pose serious health and social consequences for untreated persons and society as a whole,[163, ab, 164] the full extent of which remains to be seen.

Of the 54 countries that provided a qualitative assessment of changes in overall number of people in drug treatment, 24 (44 per cent) reported a decrease.[ac] In addition, 17 countries provided qualitative reports of disruptions to treatment services, mostly leading to pronounced decreases in contacts and/or people treated.

The disruption seems to have been particularly acute at the onset of the pandemic. A study in six countries in Europe found an overall reduction in people entering drug treatment of almost 80 per cent between January and April 2020. This trend reversed when there was an increase in patient numbers starting in May 2020, although the numbers of treated people did not return to pre-pandemic levels, and again fell off towards the end of 2020 as further waves of COVID-19 infections hit.[165]

Other countries in several regions also reported decreases in numbers of treated people at the onset of the pandemic, for example, South Africa, Bahamas, Sri Lanka and Thailand. There was a decline in drug treatment delivery in Sri Lanka even as the Government expanded residential treatment services and built a national-level treatment centre with an additional 1,000 treatment slots.[166] A New York study noted that reductions in attendance, consultations and referrals also happened in places where the service provider made no changes to staffing or service operations, interpreting this trend as a possible fear of contracting COVID-19 among people who use drugs.[167]

Service providers in the countries of the Middle East and North Africa reported that patients were abandoning opioid substitution and other forms of drug-related treatment due to several pandemic-related factors. These included an inability to afford the cost, increased stigma and discrimination against people who use drugs (such as police requiring people to have special authorization to travel to methadone-dispensing centres and the arrest of homeless persons who used drugs due to curfew violations) and

aa In theory, some of the changes in data could have been the result of data collection disruptions related to COVID-19, however, no country reported this explicitly. Recording practices among countries in relation to remote sessions also likely differed.

ab See also *Responses to drug use: strategies, policies and interventions* in the present booklet for more details.

ac Ibid.

treatment centres either being closed or operating with limited hours.[168]

Multiple countries observed a pronounced impact of the pandemic among vulnerable populations such as the homeless,[169] immigrants and refugees,[170] people with polysubstance use[171] and formerly incarcerated people who use drugs.[172] This was especially true for countries with scarcer resources for providing treatment,[173] as people who use drugs faced greater difficulties in accessing services. This development has confirmed pre-existing worries that the ongoing pandemic has exacerbated existing inequalities and disparities.[174]

Disruptions posed challenges to services for people who inject drugs

Ensuring the continuity of drug and health services for PWID has been challenging during the pandemic. Services including needle-syringe programmes, opioid agonist treatment, the provision of naloxone (an emergency antidote to prevent opioid overdose) and HIV and hepatitis C testing and treatment were all reported to be disrupted to varying degrees, especially in the beginning of the pandemic. A gradual return to more normal operations in the latter part of 2020 and early 2021 was noted, although under difficult circumstances and with reduced overall capacity.[175, 176, 177, 178]

An overall drop in the number of visits to centres offering services for preventing drug-related infectious diseases and drug-related deaths was noted across Europe. In the European Union, although indoor services such as drop-in centres and consumption rooms either often remained operational or reopened soon after the first wave of the pandemic, they often had to adhere to strict anti-pandemic hygienic measures, such as admitting only a limited number of patients at one time.[179]

A clear drop in the actual implementation of needle-syringe programmes was observed in England during the country's first lockdown, when the number of clients of needle-syringe programmes and visits fell by 36 per cent. The number of needles distributed was down 29 per cent, with needle-syringe programme coverage for PWID estimated to have dropped from 14 needles per week to 7 in mid-April 2020.[180] Some European cities (Paris, Oslo) reported needle shortages, but some countries distributed a record number of syringes in 2020 (Czechia) or reported no changes in the provision of this service. Meanwhile, in New York, PWID reported reductions in syringe-service programmes and buprenorphine utilization, and this brought with it an associated increase in risky behaviours such as syringe reuse.[181] A Canadian study has noted an increase in morbidity in people who inject drugs as a result of the closing of facilities which aimed to decrease risks associated with unsafe injection practices[182].

In Finland, a study raised concerns that decreased access to services aimed at preventing drug-related infectious diseases and drug-related deaths was associated with increased toxicological post-mortem findings of buprenorphine, amphetamine and cannabis.[183]

A survey among drug professionals in the Middle East and North Africa and neighbouring countries found reductions in services aimed at preventing drug-related infections and deaths (e.g. in Pakistan) in 2020. Reasons given for this included a lack of prioritization in public health policy (Yemen) and difficulty in retaining volunteers over fears of COVID-19 infection (State of Palestine). The same regional survey also noted increases in already present stigma towards people who use drugs and emphasized issues with social systems such as lack of citizenship documents.[184]

School closures substantially disrupted drug use prevention programmes

Schools serve as one of the most important settings for drug use prevention, and their closures due to the COVID-19 pandemic in almost all countries in 2020 and 2021[185, 186] caused heavy disruption to prevention programmes.[187]

In some countries (in Europe and the United States), moving drug use prevention programmes online served as a principal adaptation strategy.[188] Evaluation of some social-emotional skills-building programmes has shown that this may be an efficient method of delivery, which can, under certain circumstances, lead to important gains for students.[189]

Among the consequences of the pandemic on health promotion in communities, drug prevention experts

from the European Society for Prevention Research identified reduced access to preventive services and programmes and reduced exposure to health-promoting environments, such as school-based physical education and healthy meals. Both consequences are expected to lead to increased social inequality in health and risk distribution as children who need more support to fully develop their learning potential or achieve a healthy lifestyle are those who are more likely to suffer most from disruptions to school-based prevention.[190]

Pandemic brings potential positives for drug treatment services, but with certain limitations

As discussed in the *World Drug Report 2021*,[191] there are signs of innovation and improvements in service delivery that have been brought about by the pandemic. Many services for people who use drugs have shown high levels of flexibility in their efforts to circumvent limitations stemming from stay-at-home orders and to maximize the access of people who use drugs to life-saving interventions.[192, 193]

The wider adoption of telemedicine became a frequent alternative for keeping services operational during lockdowns and proved beneficial in reaching new patients by extending service coverage, including to those in remote areas. However, studies from the United States[194] and Europe[195] warn of excluding certain population groups who might have difficulty accessing this technology, such as the homeless or older people who use drugs, which could lead to increased marginalization. Other potential downsides included unclear legal provisions about privacy and confidentiality, feelings of social isolation and increased drop-outs.[196]

In several countries, among them Canada, Germany, India, Nepal, the United Arab Emirates, the United Kingdom and the United States[197], there has been increased flexibility and relaxed supervision of services for opioid substitution treatment medications such as methadone. In the United States, such flexibility has allowed clients to temporarily receive up to 28 days of take-home medication.[198] This led to reports of improved patient satisfaction,[199] although non-supervised consumption of opioid agonists is a matter of considerable debate due to concerns over the diversion of medication, the potential increased risk of overdose, and the safe storage of these medicines. In the United States, syringe services programmes indicated a desire to retain some of the changes in service delivery in the post-COVID-19 era.[200]

Evidence suggests that greater numbers of people began seeking access to drug treatment during the pandemic, although an elevated number of people sometimes encountered a shortage in treatment provision. For example, reports from Morocco noted demonstrations and arrests in front of hospitals[201] because treatment facilities struggled to meet treatment and substitution demands as people who used drugs faced shortages in their primary drugs of use.

Surveys in some high-income countries also showed some levels of increased motivation to attempt to access drug treatment.[202] This may have led to unmet need, especially among those never previously treated. A cross-sectional study in the United States and Canada identified difficulties faced by new patients attempting to access methadone clinics,[203] and a study analysing electronic health records in the United States found increased numbers of patients seeking to begin medication-assisted treatment for opioid use disorders.[204]

PWID potentially more vulnerable to COVID-19, less likely to be vaccinated

PWID and those living with HIV are potentially more vulnerable to infection and developing severe illness from COVID-19 owing to a higher prevalence of underlying medical conditions compared with the general population (including pulmonary, cardiovascular and liver diseases) and to social and economic factors.[i, ii] For instance, a large-scale study among almost 1.5 million adult COVID-19 cases from the United States found that living with HIV was associated with a 20 per cent higher risk of being hospitalized for COVID-19 infection and a 29 per cent higher risk of dying from COVID-19, compared with people without HIV.[iii]

Failure to limit COVID-19 in people who use drugs also implies epidemiological risks for the community at large[iv] and experts have therefore been advocating that people who use drugs should be a priority group for COVID-19 vaccination.[v]

However, people who use drugs exhibit greater vaccine hesitancy than the general population.[vi, vii, viii, ix] Studies with data collection periods covering the advanced stages of vaccine rollout confirmed that people with substance use disorders had the highest rates of vaccine hesitancy of all people diagnosed with psychiatric conditions (29.6 per cent),[x] with resistance often statistically associated with substance use disorders (tobacco, cannabis and/or opioids).[xi] Another study of homeless young adults, among whom drug use is prevalent, found that only 29 per cent were vaccinated and 50 per cent of those in the sample were not interested in getting vaccinated.[xii]

The reason for vaccine hesitancy cited most often by people who use drugs is safety concerns[xiii] about the harmfulness of vaccines.[xiv] Studies suggest that this may be due to lack of trust connected with stigma and previous negative experiences with the health-care system.[v] Misinformation, fake news and conspiracy theories fuelled mainly by social media are also likely a factor.[v, xv]

People who use drugs who do want to receive the vaccine face structural or systemic barriers to access them, such as affordability, inadequate access to transportation, unstable housing, and food insecurity.[xvi] Barriers to effective COVID-19 prevention can be further aggravated in people experiencing multiple levels of exclusion due to homelessness, drug use, sex work and migration.[xvii]

i EMCDDA, 'EMCDDA Update on the Implications of COVID-19 for People Who Use Drugs (PWUD) and Drug Service Providers.' (Luxembourg, 2020).

ii Tetyana I. Vasylyeva et al., 'Challenges Posed by COVID-19 to People Who Inject Drugs and Lessons from Other Outbreaks', *Journal of the International AIDS Society* 23, no. 7 (July 2020): e25583.

[iii] Xueying Yang et al., 'Associations between HIV Infection and Clinical Spectrum of COVID-19: A Population Level Analysis Based on US National COVID Cohort Collaborative (N3C) Data', *The Lancet*. HIV 8, no. 11 (November 2021): e690–700.

[iv] Farah Yasmin et al., 'Increased COVID-19 Infection Risk, COVID-19 Vaccine Inaccessibility, and Unacceptability: Worrisome Trio for Patients with Substance Abuse Disorders', *Journal of Global Health* 11 (2021): 03106, https://doi.org/10.7189/jogh.11.03106.

[v] Joshua A. Barocas, 'Business Not as Usual — Covid-19 Vaccination in Persons with Substance Use Disorders', N*ew England Journal of Medicine* 384, no. 2 (14 January 2021): e6, https://doi.org/10.1056/NEJMpv2035709.

[vi] Carmen L. Masson et al., 'COVID-19 Vaccine Trust among Clients in a Sample of California Residential Substance Use Treatment Programs', *Drug and Alcohol Dependence* 225 (August 2021): 108812, https://doi.org/10.1016/j.drugalcdep.2021.108812; Alexandra M. Mellis et al., 'Trust in a COVID-19 Vaccine among People with Substance Use Disorders', *Drug and Alcohol Dependence* 220 (1 March 2021): 108519, https://doi.org/10.1016/j.drugalcdep.2021.108519.

[vii] Paul M. Dietze et al., 'COVID-19 Vaccine Acceptability among People in Australia Who Inject Drugs: Implications for Vaccine Rollout', *Drug and Alcohol Review*, 9 November 2021, dar.13399, https://doi.org/10.1111/dar.13399.

[viii] Mara Eyllon et al., 'Associations between Psychiatric Morbidity and COVID-19 Vaccine Hesitancy: An Analysis of Electronic Health Records and Patient Survey', *Psychiatry Research* 307 (January 2022): 114329, https://doi.org/10.1016/j.psychres.2021.114329.

[ix] Joan S. Tucker et al., 'COVID-19 Vaccination Rates and Attitudes Among Young Adults With Recent Experiences of Homelessness', *Journal of Adolescent Health*, November 2021, S1054139X21006303, https://doi.org/10.1016/j.jadohealth.2021.11.017.

[x] Eyllon et al., 'Associations between Psychiatric Morbidity and COVID-19 Vaccine Hesitancy'.

[xi] Kamna Mehra et al., 'The Impact of Mental Health and Substance Use Issues on COVID-19 Vaccine Readiness: A Cross Sectional Community-Based Survey in Ontario, Canada', preprint (Psychiatry and Clinical Psychology, 3 September 2021), https://doi.org/10.1101/2021.08.30.21262844.

[xii] Tucker et al., 'COVID-19 Vaccination Rates and Attitudes Among Young Adults With Recent Experiences of Homelessness'.

[xiii] Paul M. Dietze et al., 'COVID-19 Vaccine Acceptability among People in Australia Who Inject Drugs: Implications for Vaccine Rollout', *Drug and Alcohol Review*, 9 November 2021, dar.13399.

[xiv] Tucker et al., 'COVID-19 Vaccination Rates and Attitudes Among Young Adults With Recent Experiences of Homelessness'.

[xv] Debanjan Banerjee et al., 'COVID-19 Vaccination: Crucial Roles and Opportunities for the Mental Health Professionals', *Global Mental Health* 8 (2021): e25, https://doi.org/10.1017/gmh.2021.25

[xvi] Felipe B. Arcadepani et al., 'COVID-19 Vaccination among Socially Vulnerable People Who Use Drugs', *Addiction* 116, no. 9 (September 2021): 2590–91, https://doi.org/10.1111/add.15500.

[xvii] Lucy Platt et al., 'Prevention of COVID-19 among Populations Experiencing Multiple Social Exclusions', *Journal of Epidemiology and Community Health*, 2 November 2021, jech-2021-216889, https://doi.org/10.1136/jech-2021-216889.

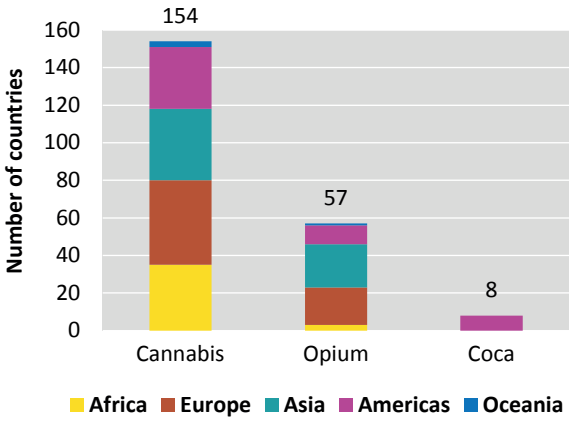
GLOBAL DRUG SUPPLY

Drug production and trafficking

Cannabis is still the most widely produced substance, cultivation of opium poppy declines while coca bush cultivation stabilizes

Cannabis cultivation remains a global phenomenon,[205] and much is produced in the country where it is consumed. By contrast, cultivation of other drugs tends to be region-specific and is often concentrated in a very small number of countries. Over the past five years, just three countries (Afghanistan, followed by Myanmar and Mexico[206]) accounted for more than 95 per cent of global cultivation of opium poppy, and another three countries (Colombia, followed by Peru and the Plurinational State of Bolivia) accounted for virtually all of the global cultivation of coca bush.[207]

FIG. 25 **Number of countries and territories directly or indirectly reporting illicit drug cultivation, 2010-2020**

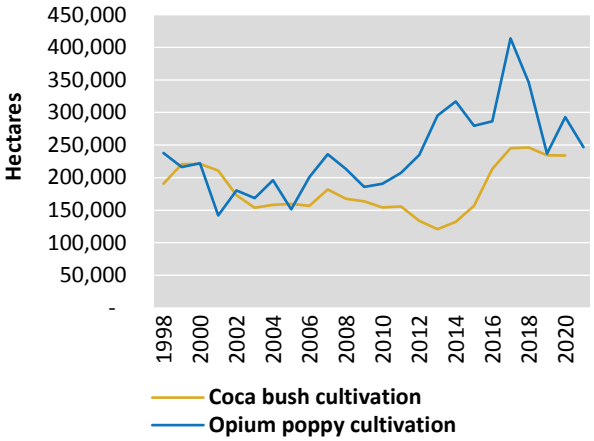


Source: UNODC, responses to the annual report questionnaire.

Note: The figure shows the totals for countries reporting the cultivation, production and eradication of cannabis plants, opium poppy and coca bush, countries reporting seizures of cannabis plants, opium poppy plants and coca bush, and countries identified by other Member States as countries of origin of cannabis plants, opium poppy plants, opium and coca bush.

The area under opium poppy cultivation declined in 2021 to around 246,800 ha, some 40 per cent less than the peak in 2017 and 16 per cent less than in 2020. The trend primarily reflected changes in Afghanistan[208] while the area under poppy cultivation in Myanmar showed a small increase in 2021, thus ending the downward trend seen between 2013 and 2020.[209] Coca bush cultivation remained relatively stable in 2020, at 234,000 ha, 5 per cent lower than the peaks seen in 2017 and 2018, mainly resulting from declining levels in Colombia,[210] while cultivation in both the Plurinational State of Bolivia[211] and Peru[212] continued to rise.

FIG. 26 **Total area under opium poppy and coca bush cultivation worldwide, 1998–2021**



Sources: UNODC coca and opium surveys in various countries; UNODC, responses to the annual report questionnaire; and United States Department of State, *International Narcotics Control Strategy Report, various years.*

Cocaine manufacture reaches new high, opium production up slightly

Global opium production has followed a long-term upward trend over the past two decades and this continued into 2021, when production was up 7 per cent from the previous year reaching an estimated 7,930 tons. This increase was primarily the result of higher opium production in Afghanistan due to higher yields,

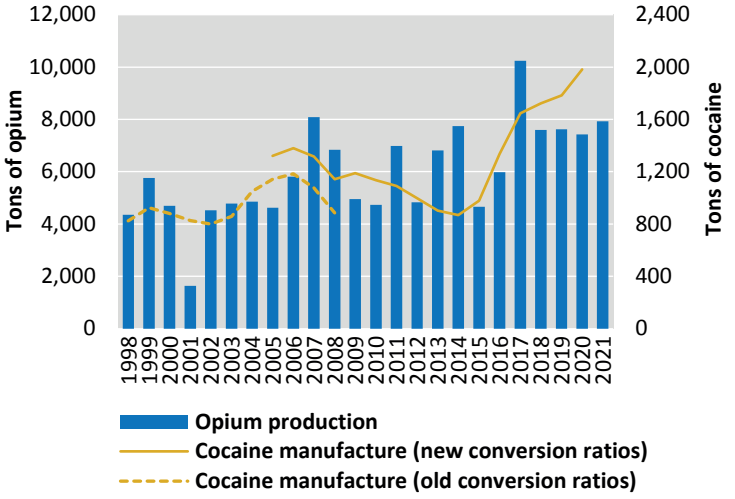
more than offsetting the decline in the area under opium poppy cultivation in the country.[213] Moreover, opium production in Myanmar also increased slightly in 2021, reversing the previous downward trend.[214]

Global cocaine manufacture hit a record high of an estimated 1,982 tons of pure cocaine in 2020, up 11 per cent from the previous year despite the stabilization in the area of coca bush under cultivation. This increase reflects rising levels of cocaine manufacture, notably in Colombia, where, despite a clear decline in the area under coca bush cultivation, there was an ongoing concentration of cultivation in areas with high levels of coca yields and sophisticated cocaine manufacturing know-how, resulting in the high efficiency of cocaine laboratories.[215]

Global seizures topped by plant-based substances; synthetic drugs show most growth

The bulk of seizure cases in the period 2019–2020 continued to be in plant-based substances (more than 70 per cent), most notably cannabis, while only a fifth of all seizures involved synthetic drugs. Growth in quantities seized, however, has been significantly outpaced by synthetic drugs, such as ATS, synthetic opioids and synthetic NPS over the longer-term period of 1998–2020.

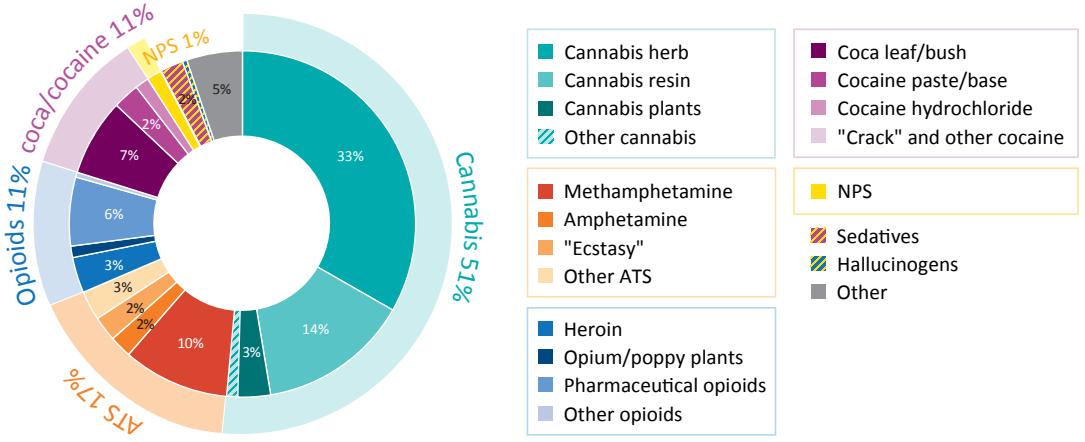
FIG. 27 Global opium production and cocaine manufacture, 1998–2021



Sources: UNODC coca and opium surveys in various countries; UNODC, responses to the annual report questionnaire; and United States Department of State, *International Narcotics Control Strategy Report, various years.*

For most drug types, except NPS and opioids, total worldwide seizures (in terms of quantities) in 2020 were greater than in 2019. While seized quantities of opiates increased, seizures of synthetic opioids declined in 2020.

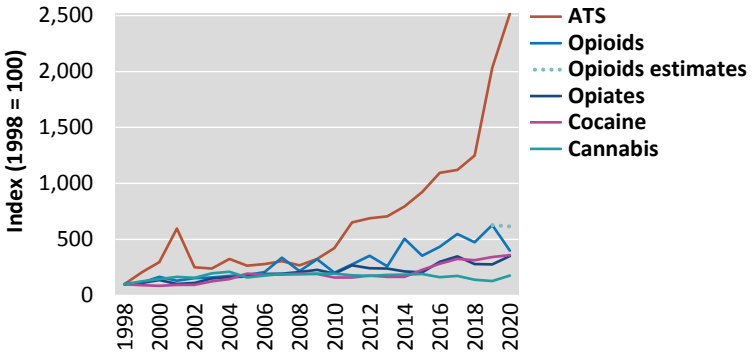
FIG. 28 Global distribution of drug seizure cases by drug types, 2019–2020



Source: UNODC, responses to the annual report questionnaire.

Note: Based on data from 78 Member States reporting, on average, 2.1 million seizure cases per year to UNODC over the period 2019–2020.

FIG. 29 Long-term trends in quantities of drugs seized, 1998–2020



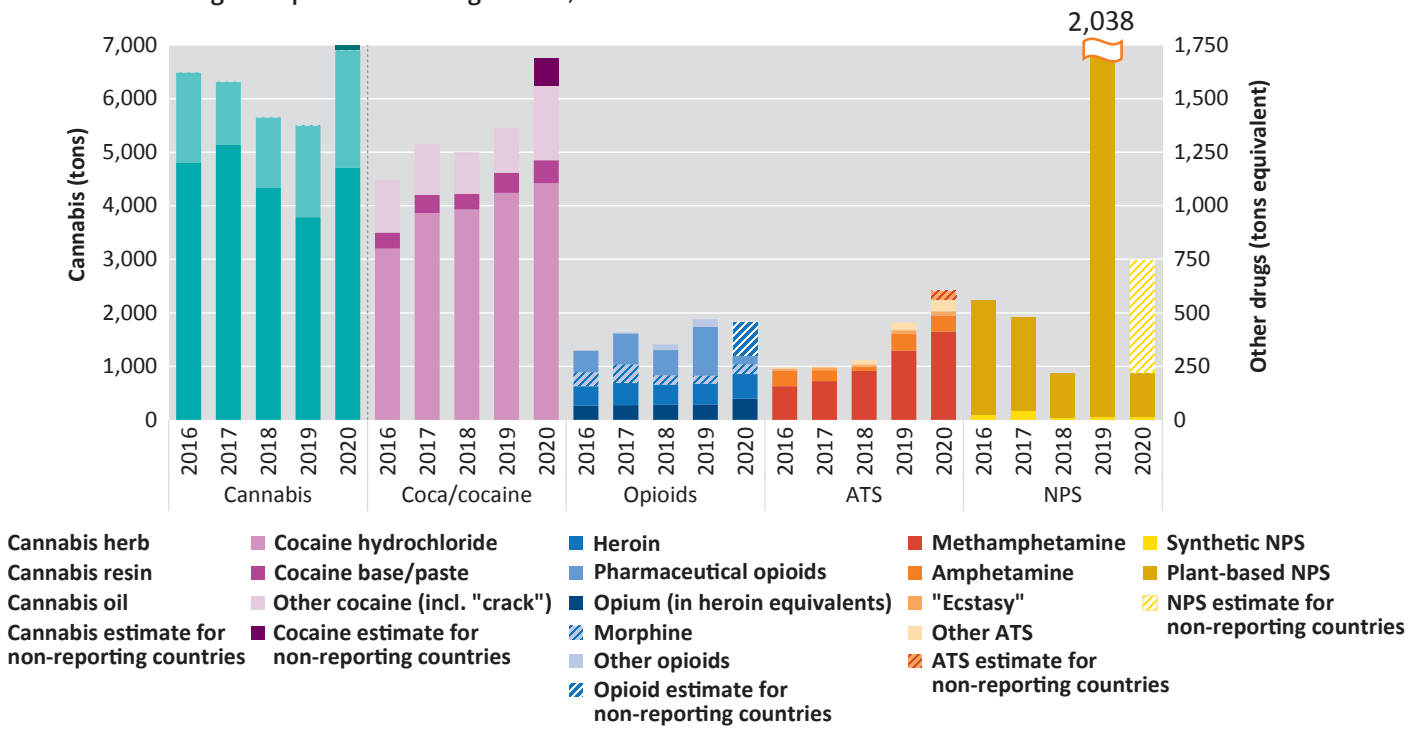
Source: UNODC, responses to the annual report questionnaire.

Notes: Data based on kilogram equivalents. "Cannabis" includes cannabis herb and cannabis resin. "Opiates" include opium expressed in heroin equivalents, plus morphine and heroin. "Opioids" include opiates plus pharmaceutical opioids and other opioids. "Cocaine" includes cocaine hydrochloride, "crack" cocaine, cocaine base, paste and salts, coca paste/cocaine base. ATS include methamphetamine, amphetamine, "ecstasy" and other ATS. "Opioids estimates" refer to estimated quantities seized in 2020, based on the assumption that countries which so far have not reported such drug seizures had seized the same quantity as a year earlier.

The largest quantities of drugs seized globally were again of cannabis herb, which, as in previous years, accounted for more than double the amount of cannabis resin seized. This was followed, in terms of quantities seized, by coca and cocaine-related substances and opioids. Quantities of cocaine hydrochloride seized continued to be larger than those of coca base, coca paste and "crack" cocaine. Quantities of opium seized continued to be larger than those of heroin or morphine; however, expressed in heroin equivalents, total heroin seizures were again greater than opium seizures. The largest ATS seizures continued to be for methamphetamine, followed by amphetamine and "ecstasy".

Seizures of plant-based NPS concerned primarily kratom, followed by khat in 2020. In addition, smaller quantities of ayahuasca and Salvia divinorum were seized. Seizures of sedatives and tranquillizers were mostly of GBL and GHB, followed by benzodiazepines

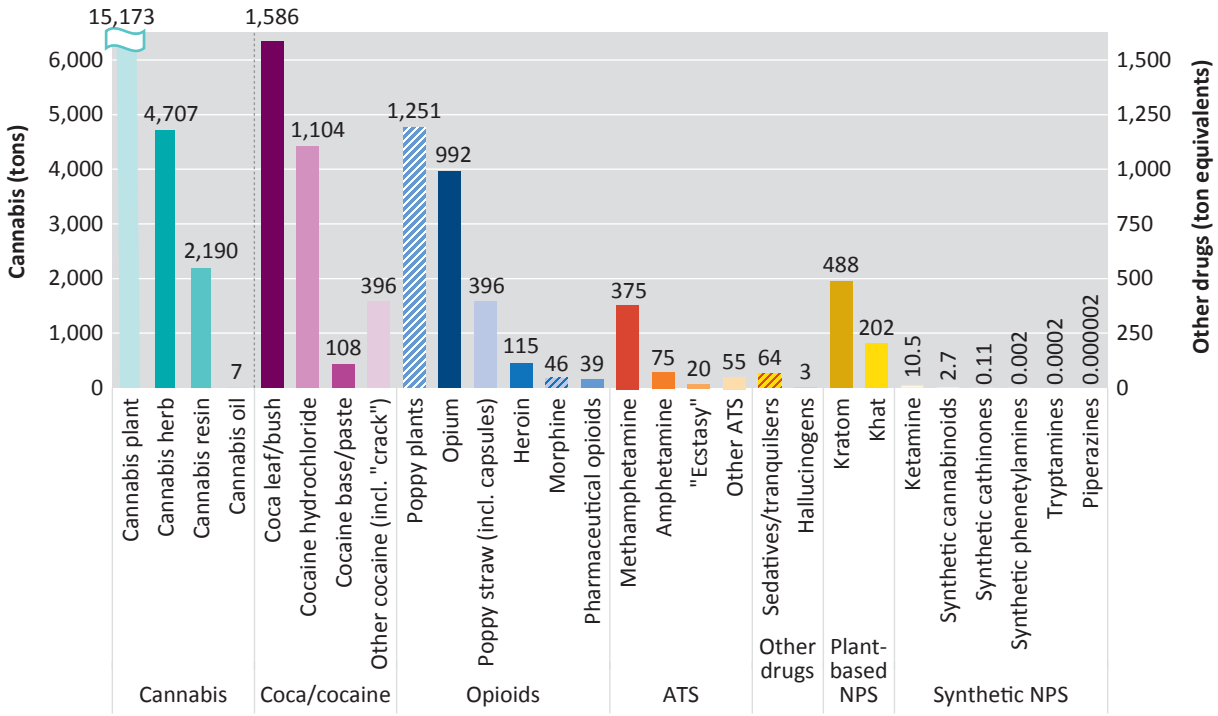
FIG. 30 Trends in global quantities of drugs seized, 2016–2020



Source: UNODC, responses to the annual report questionnaire.

Note: "Estimates" refer to estimated quantities seized in 2020 based on the assumption that countries which so far have not reported drug seizures to UNODC had seized the same quantity as a year earlier.

FIG. 31 Global quantities of drugs seized, by drug, 2020



Source: UNODC, responses to the annual report questionnaire.

and methaqualone. Meanwhile, seizures of synthetic NPS were rather small in 2020 and were primarily of ketamine and synthetic cannabinoids.

Drug trafficking over the Internet

Increased interconnectivity and the continuing evolution of online platforms has brought numerous advantages for both drug traffickers and people who use drugs. Higher levels of anonymity and reduced risks of detection have made the Internet an attractive alternative to the street and a potentially more convenient and secure method of distribution of substances for illicit drug markets. But despite these advantages, the Internet has so far not dramatically changed drug supply chains, and online platforms overall account for only a small portion of the global drug market.

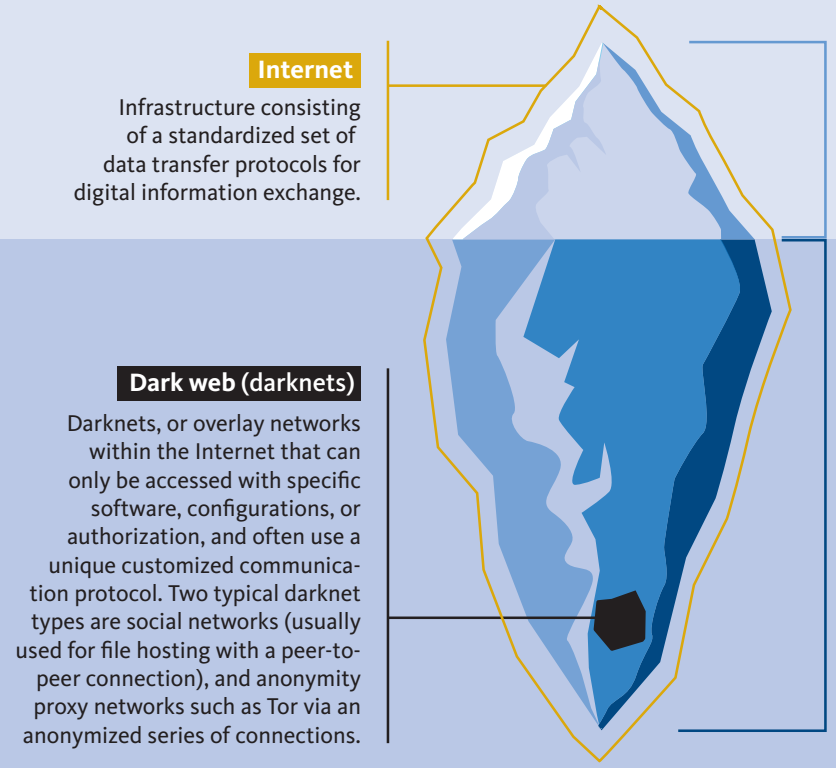
The growth in popularity of cryptocurrencies has increased the appeal of online drug transactions. While bitcoin continues to be the cryptocurrency of choice for most people who use drugs looking to make purchases on the dark web, others are gaining a foothold, for example, Monero.[216]

The marketing and sale of controlled drugs and NPS on the Internet can take place at different levels: on the open Internet, also known as the "clear web", often using encrypted communications tools; on social media applications; and on the "dark web", which forms part of the deep web. People who use drugs shift between these platforms, reacting to perceived risks and difficulties in handling rapidly evolving technologies.[217]

Social media is increasingly providing platforms for drug transactions

There is a general growing importance in the use of social media, instant messaging apps, dating apps, and other secure communication channels such as encrypted messaging apps to supply and trade drugs.[218, 219, 220] It appears that for many vendors and people who

THE INTERNET: CLEAR WEB, DEEP WEB AND DARK WEB



Internet

Infrastructure consisting of a standardized set of data transfer protocols for digital information exchange.

Clear web (surface web)

Content indexed by standard web-search engines, accessible to anyone using the Internet.

- social networks
- public pages /profiles

Deep web

Content not indexed by standard web-search engines; content can be located and accessed by a direct URL or IP address but may require a password or other security access to get past public-website pages; includes many very common uses such as web mail, online banking, private or otherwise restricted access content and profiles.

- online banking
- social networks
- restricted pages /profiles

Dark web (darknets)

Darknets, or overlay networks within the Internet that can only be accessed with specific software, configurations, or authorization, and often use a unique customized communication protocol. Two typical darknet types are social networks (usually used for file hosting with a peer-to-peer connection), and anonymity proxy networks such as Tor via an anonymized series of connections.

use drugs, these channels are much more convenient and accessible than the dark web.

Most major social media platforms now seem to serve as marketplaces for illicit drug transactions at some level. Research in Europe has shown that traffickers use captions, hashtags and emojis to reach potential customers. Traffickers are contacted via various messaging apps, and encrypted communication channels are then used to conduct transactions.[221] While some transactions are in-person and in cash, others use online payment systems, with the product being shipped to the buyer's door or a parcel pick-up point.[222]

Current dark web trends show a shift towards smaller marketplaces. The growing popularity of encrypted messenger services suggest an increased fragmentation of the digital marketplace for illicit goods and services.[223] This trend is also reflected in the nature of the financial transactions made, as small retail transactions far outnumber large wholesale purchases.[224]

Digitally enabled drug markets are increasingly important for drug sales, but still account for just a small share of the global market

Despite strong annual fluctuations, online sales on the dark web quadrupled in the period mid-2017–2020 compared with 2011–mid 2017[225] and even stronger growth rates may have been encountered in overall online drug transactions in recent years. However, it appears that online platforms still account for only a small share of the total global market. As reported in the *World Drug Report 2021*, drug-related transactions on 19 major darknet markets monitored over the period 2011–2020 were estimated at just $315 million per year

from 2017 to 2020, representing about 0.2 per cent of the combined estimated illicit annual retail drugs sales in the United States and the European Union in that period.[226] This proportion appears to have been similar in 2021.

There are signals that drug-related online sales and drug transactions conducted via encrypted communication providers or virtual private networks (VPNs) such as DoubleVPN and Safe-Inet (also known as "cryptophones") may have already overtaken drug sales via the dark web. However, all these digitally enabled sales to drug markets seem to be modest compared to retail and wholesale drug sales conducted in more traditional ways on traditional drug markets.

Research in this area remains very limited, and more empirical evidence will be needed to arrive at valid conclusions.[227] While analysis of darknet markets can be conducted by systematically crawling, scraping and parsing darknet websites and analysing customer feedback to estimate transaction numbers and minimum sales made on such markets,[228] the possibilities for research on other digitally enabled drug markets are far more limited and are largely restricted to the availability of published law enforcement data following the dismantling of such networks by authorities and/or surveys among users of such technologies, which tend not to be comprehensive.[229]

Drug trafficking over the dark web

Prominent darknet markets in 2020 and 2021

Darknet marketplaces, even those with the largest volumes of sales, have always been characterized by their temporary nature. Markets routinely disappear, mostly because of law enforcement action or exit

Limitations of calculation made on minimum sales on darknet markets

Drugs and other goods and services are usually offered by vendors on a darknet market, providing information on the quantities of items offered and the price requested. Once a transaction has taken place and the item delivered, the customer usually leaves feedback under the listed item. While the effective money flows are usually not known, feedback can be used as a proxy for actual transactions. Sales calculations then assume that one item at the offered price was purchased.[i]

Calculating the total sales made on a darknet market on the basis of the number of individual feedback comments provided generates a conservative (i.e. a low) estimate[i] because:

(a) Not all customers leave feedback, although the decision to leave feedback is not completely voluntary. On some markets, customers are compelled to comment because vendors consider positive feedback to be one of the most important marketing tools on the dark web;[i]

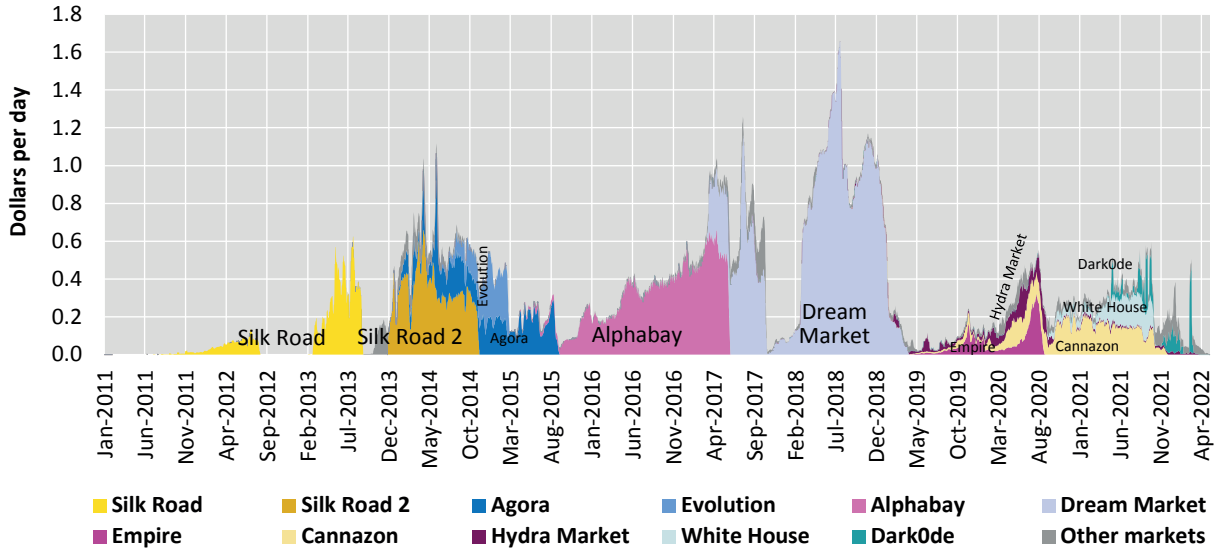
(b) A customer can purchase more than the minimum unit quantity offered on a darknet market.[i] However, this is not really convenient. As larger quantities are usually offered at lower unit prices, it would be expensive to make many single purchases rather than to buy in bulk from the same vendor. There are thus indications that most customers in fact purchase the standard unit quantity offered or only slightly larger quantities.

(c) Not all sites from a darknet market can be fully scraped within a short period of time without arousing suspicion by site administrators. Thus, the actual proportion scraped can differ substantially from market to market and over time (ranging initially (i.e. prior to mid–2015) from 60 per cent to more than 90 per cent of market sites).[i] In recent years, this bias seems to have gained importance, possibly as a result of administrators being better equipped to combat unwanted monitoring. On average 50 per cent of darknet market sites could actually be scraped in the period mid-2017–2020, compared with close to 87 per cent in the period 2011–mid-2017. Assuming items offered and sold on non-scraped darknet sites are similar to those on scraped darknet sites (which is not certain), this could mean that actual darknet sales are twice as high as the minimum darknet sales shown on the graphs contained in this report.[ii]

[i] Kyle Soska and Nicolas Christin, *Measuring the Longitudinal Evolution of the Online Anonymous Marketplace Ecosystem, Proceedings of the 24th USENIX Security Symposium (Washington D.C.: Usenix The Advanced Computing Systems Association, 2015).*

[ii] UNODC, *World Drug Report 2021*, Booklet 2, *Global Overview: Drug Demand, Drug Supply, 2021.*

FIG. 32 Daily sales (minimum, mostly drugs) on 38 major global darknet markets, 2011–2021



Source: UNODC analysis based on dark web data (see online Methodological Annex).

Note: Data refer to minimum stacked market sales of different products and services, of which drugs accounted for 92 per cent, and are presented as seven-day averages. All data shown reflect minimum sales as the current web-crawler techniques do not cover all sites on a specific market and because not all customers leave feedback, information which is used to arrive at total sales figures.

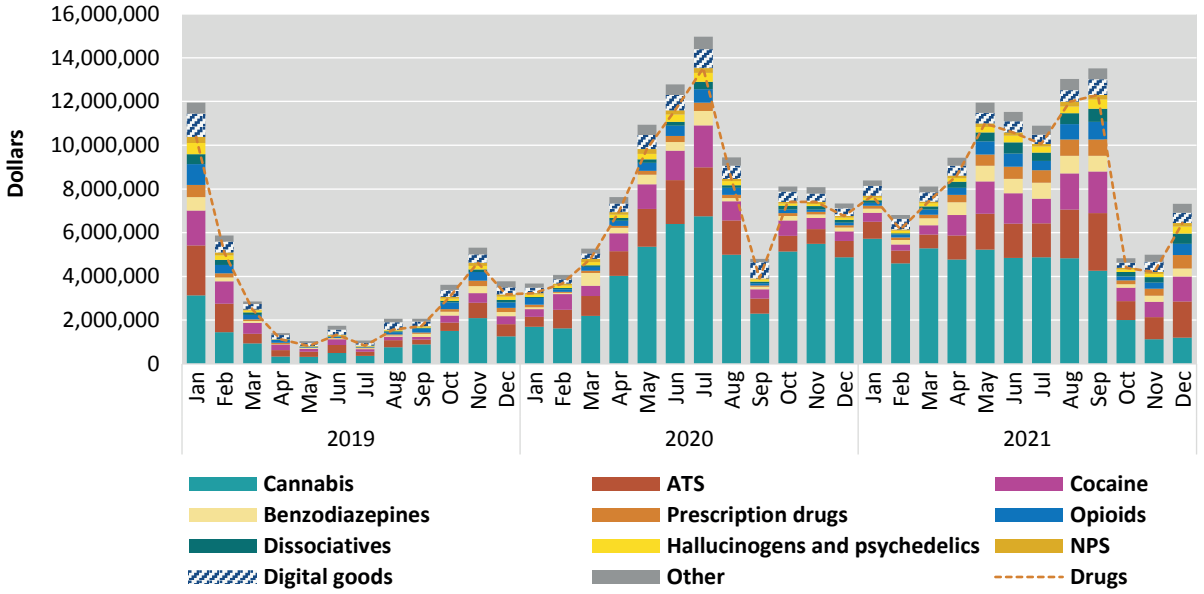
scams. Rumours in the media may also affect their activity as in the case of Dream Market, which was the last major darknet market. It suffered a serious setback in 2017 following rumours that its customers had lost money, and it was forced to close operations in 2019 after speculation that its operators had sold client data.[230]

No clearly dominating darknet market has emerged since, although Empire and Hydra Market temporarily played a significant role in 2020. Empire gained strength in 2019 and 2020 and was apparently the world's largest darknet market (in terms of sales) in the third quarter of 2020[231] according to data systematically collected on 38 major darknet markets over the period 2011–2021 by crawling, scraping and parsing darknet sites.[232, 233] It stopped, however, its operations following an exit scam in late August 2020.[234] Hydra Market, the world's largest "Russian speaking" darknet market, emerged as the world's largest darknet market in the second and third quarters of 2019 and regained this position in the first quarter of 2020; it remained a major player until the fourth quarter of 2021[235] and was eventually dismantled in April 2022 according to the media.[236, 237] Cannazon, primarily a marketplace for the sale of cannabis,[238] was likely the world's largest darknet market in the second quarter of 2020 (at the height of the COVID-19 related mobility restrictions) as well as in the fourth quarter of 2020, a position it continued to hold throughout the first half of 2021.[239] Later in the year, there were reports that Cannazon was forced to shut-down operations following so-called "Distributed Denial-of-Service" (DDoS) attacks.[ad, 240] It had already been overtaken by the darknet market White House in the third quarter of 2021 and by the Dark0de Reborn marketplace in the fourth quarter of 2021.[241]

White House was established in 2019 and by July 2021 had the largest daily sales of all regularly monitored darknet markets.[242] Prior to its demise on 1 October 2021, the total listings on White House also included drug listings of fentanyl and its analogues, i.e. of substances which were banned on several other darknet

ad DDoS are malicious attempts to disrupt the normal traffic of a targeted server, service, or network by overwhelming the target or its surrounding infrastructure with a flood of Internet traffic.

FIG. 33 Minimum monthly sales on 28 major darknet markets, January 2019–December 2021



Source: UNODC analysis based on dark web data (see online Methodological Annex).

Note: Aggregate minimum sales on 28 major darknet markets operating, at least partially, between January 2019 and December 2021, ranked in terms of minimum sales over this period:, Cannazon, White House, Empire, Hydra Market, Dream Market, DarkOde, Versus, Monopoly, Torrez, Deep Web Chinese, BitBazaar, Wall Street, Dark Market, Yellow Brick, Tor Market, Asean, Berlusconi, Apollon, , Tochka, Cryptonia, Vice City, Mega Darknet Market, Square Market, Darkfox, Agartha, MGM-Grand, Invictus and Avaris. Stimulants refers to synthetic stimulants, including ATS and cathinones. All data shown reflect a lower bound estimate of sales as the current web-crawler techniques do not cover all sites on a specific market and because not all customers leave feedback, information which is used to arrive at total sales figures.

sites.[243] During its existence, drugs accounted for 93 per cent of all White House darknet sales. Almost half of these sales concerned stimulants, both synthetic (ATS) and plant-based (cocaine) stimulants.[244] Unlike most other darknet markets, White House accepted primarily Monero for payment purposes.[245]

Dark web sales were monitored on 38 darknet markets from 2011 to 2021, and 28 markets were monitored over the period 2019–2021. From August 2021, such sales were dominated by DarkOde,[246] a marketplace which does not require upfront deposits, and which includes various special security features.[ae, 247] More than 92 per cent of all its sales in 2021 were drug related; stimulants accounted for over 40 per cent of all drug sales.[248]

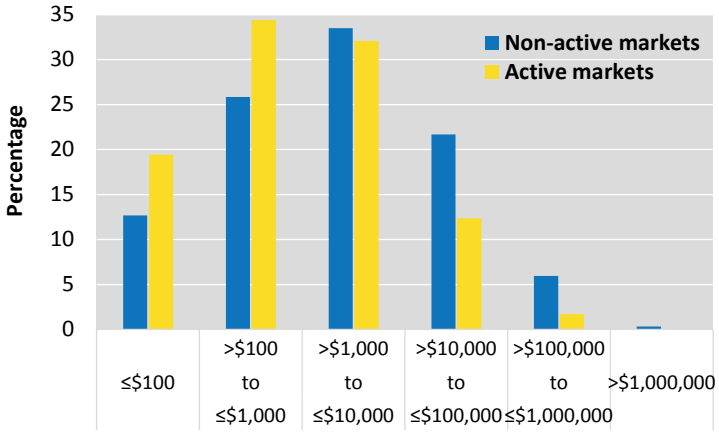
ae Even though some sources claim that it did not prevent some buyers losing their funds and failing to receive the purchased drugs.

Overall sales on the 28 dark web markets monitored over the period 2019–2021 rose by almost 130 per cent in 2020 as compared to 2019 (a year which saw low sales figures as a consequence of the demise of Dream Market) and by a further 13 per cent in 2021.[249] Nonetheless, preliminary data for the fourth quarter of 2021 indicate a strong decline in dark web sales, with minimum sales falling by more than 50 per cent quarter-on-quarter, somewhat reflecting the demise of White House. Declines were noted from most of the larger darknet markets, though it cannot be ruled out that these data may also indicate a shift to new darknet markets not systematically monitored so-far.

Drugs appear to dominate darknet sales, cannabis above all

In 2021, drugs accounted for 91 per cent of all sales on the 28 major darknet marketplaces monitored over the period 2019–2021, up from 85 per cent in 2019.[250]

FIG. 34 Distribution of darknet sales by vendors in active and non-active darknet markets, 2011-first quarter of 2022



Source: UNODC analysis based on dark web data (see online Methodological Annex).

Note: *"Active darknet markets" are markets that were operating in the first quarter of 2022; "non-active darknet markets" are markets which used to be active at some time over the past decade but subsequently ceased their operations. Information on this graph for "active darknet markets" is based on data from nine darknet markets operating as of the first quarter of 2022 comprising 7,539 vendors; the "non-active darknet markets" included 29 darknet markets over period 2011-first quarter of 2022 comprising 41,871 vendors.*

Cannabis remained by far the most popular drug, accounting for 48 per cent of all drugs sold (in value terms) on the monitored marketplaces in 2021, up from 37 per cent in 2019 though down from 58 per cent in 2020. The proportion of sales of most other drugs declined in 2020, with stimulants, NPS, cocaine and opioids all seeing a fall in market share in 2020 before partly recovering in 2021. The next largest shares of drug sales on the dark web after cannabis in 2021 were reported for ATS (16 per cent), cocaine (12 percent), benzodiazepines (6 per cent), followed by opioids and pharmaceutical drugs (5 per cent each).[251]

Darknet sales by individual vendors remain relatively small, while the period in which vendors are active declines

Despite market volatility, the structure of size distribution on the markets monitored, has not changed much with most vendors continuing to sell only small quantities of drugs via the dark web. Close to 85 per cent of all vendors on «active» darknet markets (i.e. those operating at least partially over the first quarter of 2022), and still almost three quarters on «non-active» darknet markets (i.e. markets that were closed or had stopped their operations between 2011 and 2021) sold products (services and commodities of which drugs represented the main part), with an overall worth of less than $10,000 during their operational lifespans. Just 150 vendors were identified as having recorded total sales worth more than $1 million between 2011 and the first quarter of 2022 and just three of these vendors were active on darknet markets in the first quarter of 2022.[252]

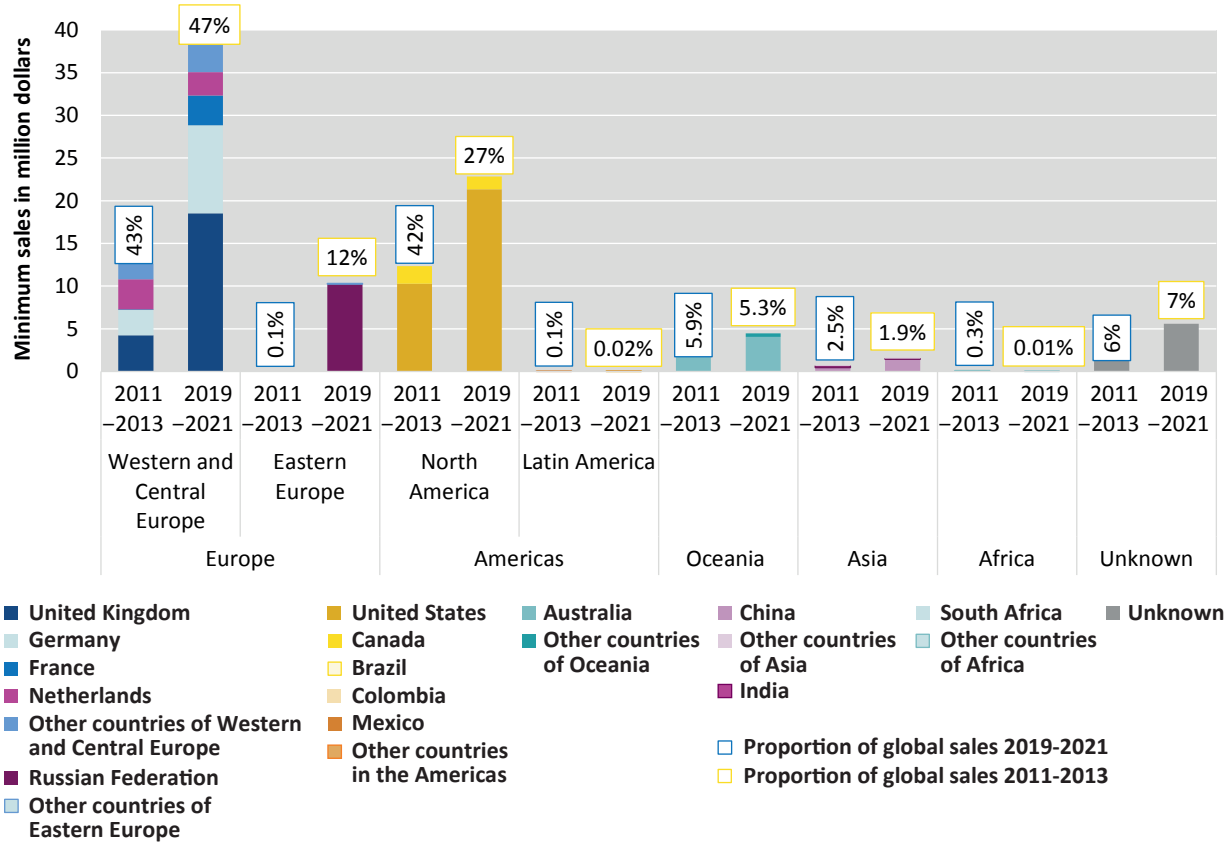
The overall largest vendors with minimum sales of some $1.3 million each on monitored markets active in the first quarter of 2022, were ЦУМ Москва – Top1 cocaine and GangBang Shop, both selling drugs, notably cocaine, via Hydra Market over the period 2018 to the first quarter of 2022. The overall largest sellers, identified on the dark web between 2011 and 2021, were Drug.store (mostly selling cocaine on Silk Road 2), Shiny-Flakes (selling ATS on Evolution) and thedudesspecialstash (selling cannabis on Cannazon) with total minimum sales of these vendors ranging from $4.8 to $6.3 million.[253]

In general, however, vendors have rarely remained in existence for long, operating on average for just 188 days (based on information collected from 38 monitored darknet markets) with a median period of 101 days per vendor since 2011. The length of time that vendors operate on the dark web is declining. A vendor commencing operations on or after 1 January 2017 on average operated on darknet markets for 179 days, compared with 203 days for those which began operations prior to that date.[254]

The largest distributors remain in Europe and North America

The country of shipment was identifiable in 93 per cent of transactions that were detected on the 28 major darknet markets monitored between 2019 and 2021. Noticeable was the significant emergence of the country of shipment in Eastern Europe, driven in large part by the increased weight of sales on Hydra Market (targeting consumers in Russian-speaking countries). Also of note is the emergence of marketplaces in Asia and South America, indicating the possible expansion of the use of the dark web for supplying drugs in those regions. Data suggest that transactions between

FIG. 35 Departure location of shipments mentioned in sales on major darknet markets, 2011–2013 and 2019–2021



Source: UNODC analysis based on dark web data (see online Methodological Annex).

Note: For the period January 2011 to December 2013 a total of 5 major darknet markets, operating, at least partially, were identified and included in the analysis. They were, ranked in terms of sales over this period: Silk Road, Silk Road 2, Black Market reloaded, Pandora and Agora.

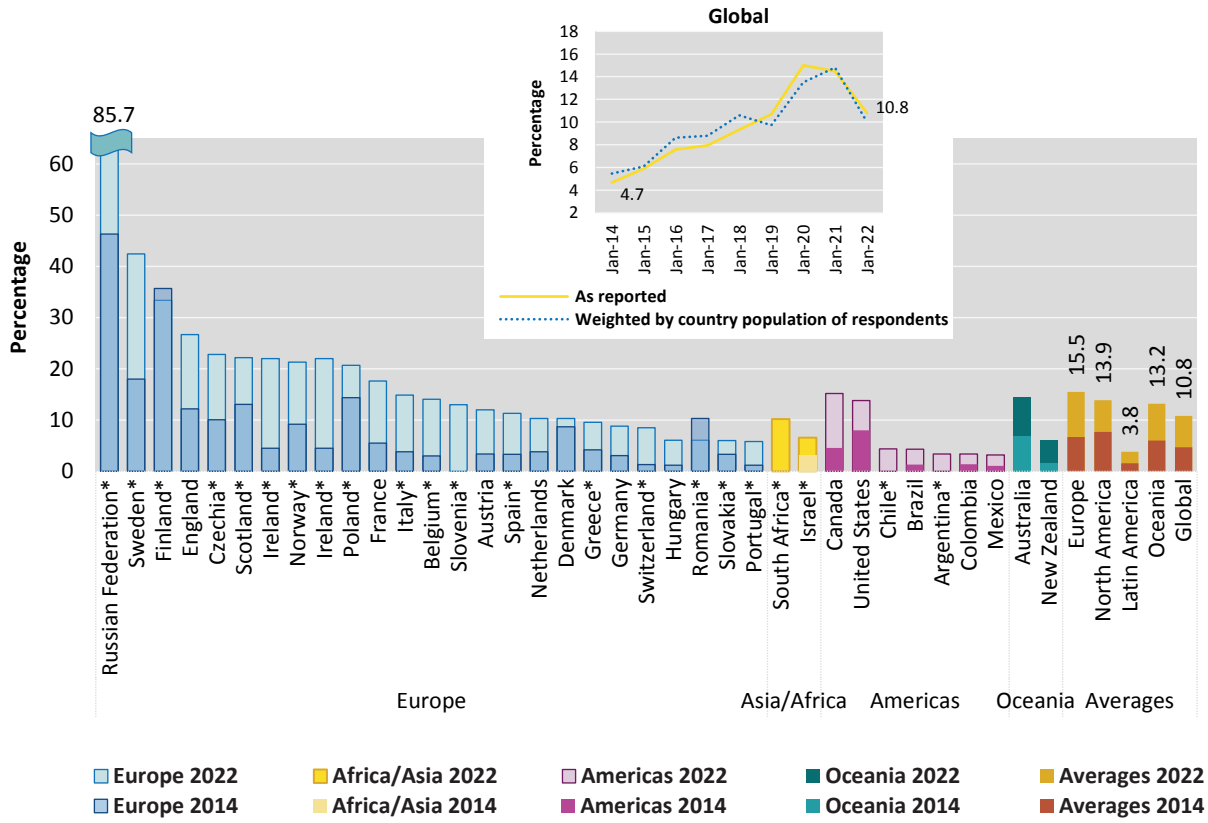
For the period January 2019 to December 2021 a total of 28 major darknet markets, operating, at least partially, were identified and included in the analysis. They were, ranked in terms of sales over this period: Cannazon, White House, Empire, Hydra Market, Dream Market, DarkOde, Versus, Monopoly, Torrez, Deep Web Chinese, BitBazaar, Wall Street, Dark Market, Yellow Brick, Tor Market, Asean, Berlusconi, Apollon, Tochka, Cryptonia, Vice City, Mega Darknet Market, Square Market, Darkfox, Agartha, MGM-Grand, Invictus and Avaris. All data shown reflect a lower bound estimate of sales as the current web-crawler techniques do not cover all sites on a specific market and because not all customers leave feedback, information which is used to arrive at total sales figures.

regions are limited, and most transactions continue to take place within single regions.[255]

Popularity of darknet markets among Internet users who use drugs declined in 2021

Rigorous data describing the use of the dark web from the perspective of people who use drugs is hard to come by. The Global Drug Survey provides some information on the percentage of people who use drugs that purchased drugs on the dark web, but this information is limited to a non-representative convenience sample of roughly 100,000 self-selected people from more than 50 (mostly high-income) countries and should be used with caution. This survey suggests a long-term upward trend in the proportion of persons purchasing drugs on the dark web among all Internet users who use drugs. This proportion more than tripled, from 4.7 per cent in January 2014 to 14.5 per cent

FIG. 36 Proportion of people purchasing drugs over the dark web among surveyed Internet users who used drugs in the past year, global average and selected countries, January 2014 to January 2022 or latest year for which data is available



Data for either January 2014 or January 2022 were not available; data from the most recent year available were taken as a proxy.

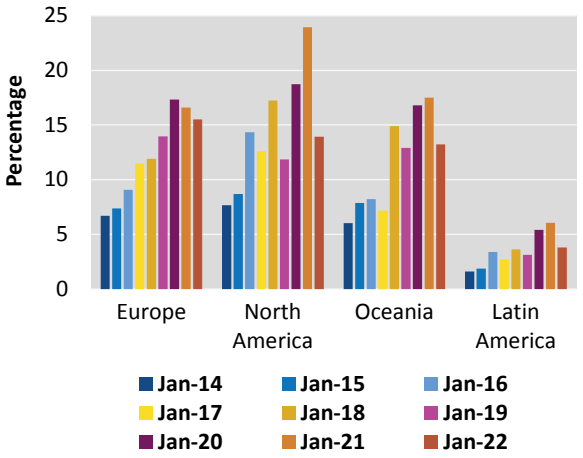
Source: UNODC calculations based on Global Drug Survey 2022 data (and previous years): detailed findings on drug cryptomarkets.

Note: The Global Drug Survey is based on a convenience sample of 100,000 to 500,000 people every year, of whom 20,000 to 90,000 replied to questions on drug purchases over the dark web (23,300 in January 2022). All regional averages are weighted by the population of each country. North America: averages based on information from respondents in Canada and the United States; Europe: averages based on information from respondents in 23 European countries (not included are data from the Russian Federation, which are only available from small samples in 2018 and 2020); Oceania: averages based on information from respondents in Australia and New Zealand; Latin America: averages based on information from respondents in Argentina, Brazil, Chile, Colombia and Mexico.

in January 2021, with increases reported in all regions. However, this upward trend did not continue. The proportion at the global level declined markedly, falling back to 10.8 per cent by January 2022, i.e. to around the pre-COVID-19 levels reported in 2019. Declines as compared to a year earlier were reported in all regions.[256] Reasons for this decline have not been documented but the loss of confidence following major darkmarket closures may be among the drivers.

Available data also suggest that the use of the dark web for drug purchases may be still male dominated. A subset of the 2021 Global Drug Survey among 1,444 dark web users over the period 1 December 2020 to 16 March 2021 revealed that 80 per cent of the people purchasing drugs on the dark web were men, 13 per cent were women and 7 per cent considered themselves to be "transgender", "non-binary" or "intersex".[257]

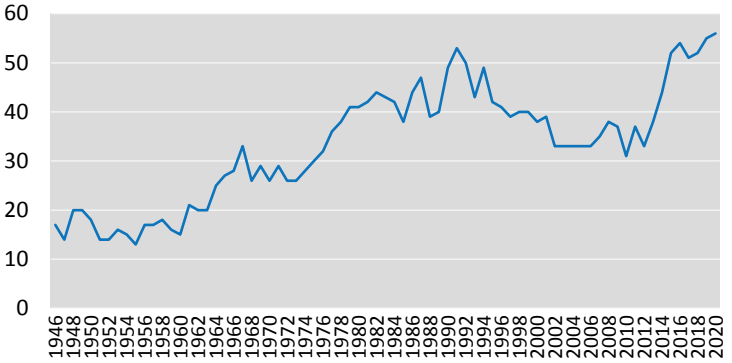
FIG. 37 Proportion of people purchasing drugs over the dark web among surveyed Internet users who used drugs in the past year, selected regions and subregions, 2014–2022



Source: UNODC calculations based on Global Drug Survey 2022 data (and previous years): detailed findings on drug cryptomarkets.

Note: The Global Drug Survey is based on a convenience sample of 50,000 to 500,000 people every year, of whom 20,000 to 90,000 replied to questions on drug purchases over the dark web (23,300 in January 2022). All regional averages are weighted by the population of each country. North America: averages based on information from respondents in Canada and the United States; Europe: averages based on information from respondents in 23 European countries (not included are data from the Russian Federation, which are only available from small samples in 2018 and 2020); Oceania: averages based on information from respondents in Australia and New Zealand; Latin America: averages based on information from respondents in Argentina, Brazil, Chile, Colombia and Mexico.

FIG. 38 Number of armed conflicts globally, 1946–2020



Source: Uppsala Conflict Data Program.

The role of drugs in recent conflicts

There is a literature exploring the relationship between the illicit drug economy and intrastate conflict and insurgencies, as well as the linkages between organized crime and terrorist groups.[258, 259, 260] The Security Council has also taken up the issue of drug trafficking and its role in undermining governance and security.[261]

The 2010s saw an increase in the number of armed conflicts around the world, after a decline in the first decade of the 21st century, and the trend has continued into the 2020s.

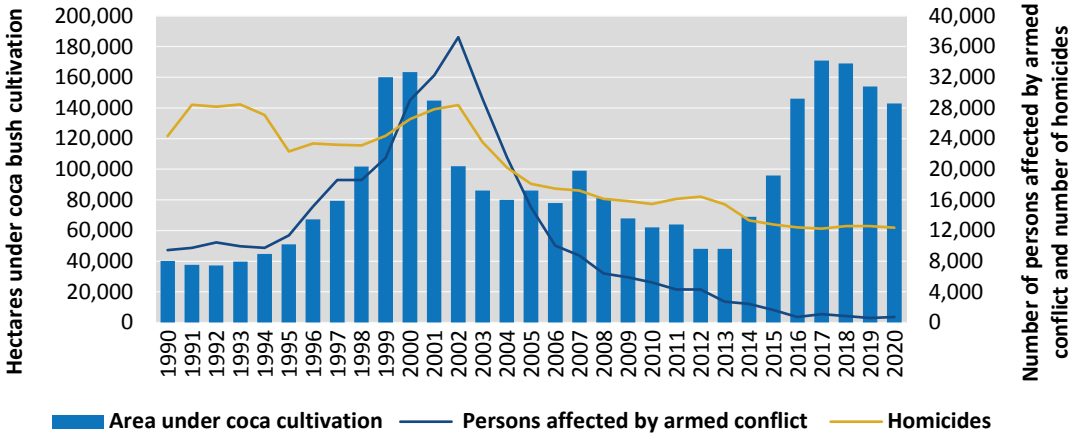
Be it production, trafficking or providing a market, conflict and the illicit drug trade in many cases overlap geographically. Notable examples include Afghanistan and Colombia, which had long-standing insurgencies in the past and which together are responsible for a significant share of global heroin and cocaine manufacture.

In Colombia, coca bush cultivation and trafficking were instrumental to the existence of the insurgency of the People's Alternative Revolutionary Force (FARC).[262] However, when FARC agreed to halt its involvement in the drug business as part of the 2016 peace agreement, coca cultivation did not decrease nationwide, partly because not all non-state armed groups signed up to the deal. There were also increases in some areas, as some farmers planted coca in order to qualify for government payments to cease cultivation, and as a result production reached a record high in 2017.[263]

Neighbouring Peru, meanwhile, saw its area under coca bush cultivation decline by 64 per cent in the 1990s, in tandem with concerted State action against insurgent group Sendero Luminoso ("Shining path"), which was known to finance activities through coca production.[264]

Weak rule of law creates the conditions for starting or expanding the illicit drug business. Even if armed groups themselves may not be the primary actors, they may capitalize on existing drug markets, exploiting territorial dominance for financial benefit, or become involved in the illicit production and trade themselves.

FIG. 39 Area under coca cultivation, number of homicides, and persons affected by the armed conflict in Colombia, 1990–2020



Sources: United Nations Survey of Crime Trends and Operational of Criminal Justice System; UNODC and the Government of Colombia, *Colombia: Monitoreo de Territories Afectados por Cultivos Ilícitos 2020* (July 2021 and previous years), for data prior to 1999; *World Drug Report 2004*, vol. 2 (drawing on United States Department of State, *International Narcotics Control Strategy Report*, various years); and Observatorio de Memoria y Conflicto of the Centro Nacional de Memoria Historico, *El Conflicto Armado en Cifras, Tablero Principal* (October 2021).

Note: "Person affected by the armed conflict in Colombia" is defined as a person in Colombia who was subject to one or more types of civil conflict/war-related types of violence, including war actions, selected killings, attacks on the population, terrorist attacks, damages to goods, forced disappearances, massacres, mines, recruitments, hijackings and sexual violence.

But while insurgency and drugs can have a symbiotic relationship, it is not necessarily the case that insurgents are the major drug traffickers, even when the insurgencies create the conditions that help drug trafficking to flourish. Likewise, drug trafficking can contribute to destabilizing conditions that drive conflict, such as corruption, unfair economic competition and weak social control systems, even if the traffickers do not lead the insurgency directly, as was the case in Colombia in the past.

Conflicts can substantially change the illicit drug trade[af] and drug trafficking routes. Large-scale drug trafficking can occur without lethal violence. For example, for many years, hundreds of tons of heroin have crossed parts Southeast Europe where homicide rates remain low. But areas through which large volumes of drugs transit can also be vulnerable to destabilization and conflict. This is especially true in areas where power is contested between groups.[265]

Insurgencies themselves are not often responsible for the transnational long-range trafficking of drugs for profit.[ag] Most insurgencies focus on activities in areas that they physically control. For example, the conflict between the State of Colombia and FARC provided a clear example of the "taxation" of drug crop-cultivating farmers and of direct involvement in cocaine manufacturing and trafficking in order to fund the insurgents' activities, but FARC groups were not originally involved in large-scale trafficking outside Colombia, although they later moved into the markets in neighbouring countries.[266]

Opiates and Afghanistan

In Afghanistan, the illicit drug trade has been strongly linked with long-term instability and poverty. Opium has been used in the northern areas of the country

af The territory of the former Yugoslavia, for example, in the 1980s and beginning of the 1990s, used to be a major area for heroin transiting along the Balkan route reaching Western Europe. During the Yugoslav Wars (1991-2001) these routes were disrupted. See: 1 Hajdinjak, M., Smuggling in Southeast Europe: The Yugoslav Wars and the development of regional criminal networks in the Balkans (Center for the Study of Democracy, 2002), p. 42

ag For example, the Taliban or other Afghan groups have not been involved in heroin trafficking beyond neighbouring countries (see DMP brief)

since the eighteenth century, but it was only in the 1980s that the country began to emerge as a major source of global supply after poppy cultivation was pushed out of other areas of the Golden Crescent. While the drug trade carries significant economic weight in all countries discussed here, nowhere has it been as important as in Afghanistan, where it has constituted a significant share of national productive activity.

Income from the illicit opiate economy in Afghanistan was estimated to be between $1.8 billion and $2.7 billion in 2021, equivalent to as much as 12 per cent of GDP.[267] Farmers have long paid taxes to non-state actors, including the Taliban prior to August 2021. To use farm gate sales data for 2019 (latest available data), this corresponded to roughly $14.5 million paid in opium taxes to non-State armed groups out of a total farm gate sales value of $350 million. It is not known if a similar tax was applied to revenues from manufacturing and trafficking of opiates, but if it were, it would have yielded up to $113 million for non-State actors, at the time mostly Taliban.[268]

In May 2021, the Afghan government in power at that time reported that the Taliban had also been involved in Afghanistan's rapidly expanding manufacturing of methamphetamine.[269] Production appears to be concentrated in provinces bordering the Islamic Republic of Iran,[270] and soaring seizures of methamphetamine of Afghan origin in neighbouring countries indicate a growing market and an increased threat to the region and beyond.[271]

In addition to taxing opium production, the Taliban had also been involved in its trafficking,[272] and this was likely their major source of income from drugs. Although some Afghan traffickers have been arrested in Europe, most Afghans linked to large heroin seizures operate in and around their own country. This suggests other groups engage in bulk heroin trafficking across regions and continents.[273] Meanwhile, traditional opiate trafficking routes are also being used to traffic methamphetamine, and this drug is being used in conjunction with opioids in the region.[274]

Although the peace process in Colombia and the Taliban's return to power in Afghanistan have essentially ended insurgencies, both countries have to date retained prominent roles in illicit drug cultivation and production.

Manufacture and market proximity

"Captagon" production was already a concern in the Levant before the start of the Syrian Civil War in 2011,[ah] but massive recent seizures appear to indicate that production has greatly increased in the time since. Illicit "captagon" was previously sourced primarily from Eastern Europe, but as conflict has bred conditions conducive to the illicit drug trade, manufacture appears to have shifted to the region, which is also close to the Gulf, the major consumer market for "captagon".

Seizure data reported by Member States have identified Syria and Lebanon as sources of "captagon"[ai]. Shipments coming from Syria are known to transit Jordan or the sea to reach its destination.[aj]

Myanmar suffers from long-standing unresolved conflict and remains a host for drug production. Non-State armed groups in Myanmar did not create the drug trade (opium production in the Golden Triangle region dates to the nineteenth century), but drug trafficking now allows armed groups in Shan State and elsewhere to generate profits, while other groups that are less involved also profit from taxation of the trade. In this way, the drug economy fuels the conflict, and conversely the conflict reinforces the country's illicit drug economy. Increasing trends in drug production and trafficking point to a further acceleration and reinforcing of this dynamic, in particular in the light of the current environment of increased insecurity and the absence of rule of law.[275]

When opium production in ceasefire regions of Myanmar declined in the 2000s, it was accompanied by the emergence of methamphetamine manufacture, which plays an important role in financing a multitude of armed actors throughout the country, as a sharp rise

ah For example, in March 2007, law enforcement authorities seized captagon precursors and equipment in Lebanon's Bekaa Valley. See UNODC, *Global SMART Update 2009*. Vienna: UNODC, 2009. By 2009, the Lebanese authorities were already indicating Syria as the origin of captagon found in their country in their ARQ response.

ai See booklet 4 of the present report, *Cocaine, Amphetamine-type stimulants and New psychoactive substances*.

aj Ibid.

in demand in South-East Asia has coincided with coastal areas becoming increasingly important trafficking hubs for internationally bound drug shipments originating in Shan State.[276]

A combination of factors is most likely providing groups with ideal conditions for illicit drug production in Myanmar. Instability in parts of the country, particularly its autonomous and special regions, has been conducive to an expansion of the manufacturing and trafficking of methamphetamine and its precursors, allowing armed groups to serve as security providers at production facilities and provide safe passage for smugglers.[277]

The Sahel: transit and taxation

The Sahel region[ak] of Africa is a vast area stretching across the continent south of the Sahara. It has been affected by conflict, and its volatility has been exploited by drug traffickers seeking to avoid strict border controls between Morocco and Spain and Algeria. Diverse non-state armed groups have been active in the region over time, including jihadist groups asserting alliance with Al-Qaida and Da'esh, and these actors utilize the diverse range of income sources usually available to insurgents, including at least some level of involvement in the illicit drug trade.[278]

Here, the main drug for trafficking is cannabis resin, mostly produced in Morocco for consumption markets in Europe and the Middle East and trafficked along Sahelian routes. There is mounting evidence that the Sahel route is being used for cannabis resin trafficking, and the Security Council's Panel of Experts on Mali[al] reports several instances in which large cannabis resin shipments transiting from Morocco to Libya have produced deadly clashes between groups in the region, potentially constituting ceasefire violations.[279]

Transiting of cocaine through West Africa has re-emerged in recent years[am] and recent seizures in Mali and the Niger confirm trafficking of relatively large volumes of cocaine also via the Sahel.[280] Arrests in West Africa associated with record high seizures of the drug in the region also suggest trafficking outside the Sahel conflict zone could be funding armed groups operating there.[281,282] Several individuals suspected of involvement in cocaine seizures in West African coastal countries held Malian passports, including in relation to three tons seized in the Gambia in January 2021 and 1 ton seized in Côte d'Ivoire in February 2021.[283]

Seizures in Libya of tramadol, heroin and ATS[284] raise questions about whether trafficking in these drugs also affects the Sahel, although information on the routes to reach and depart from Libya is very limited.

The Security Council's Panel of Experts on Mali devotes a whole section of its most recent report to organized crime, noting the levying of taxes by non-state armed groups. While the country does not represent the whole of the Sahel, it is likely reflective of the trafficking situation in the wider region and some of the trafficking flows documented involve neighbouring countries. The Panel suggests armed groups with a variety of allegiances are involved in providing transportation for drug shipments,[285] showing that illicit markets offer potential financial resources to those who have been economically reliant on continued warfare. The Panel of Experts noted that while the drugs are trafficked through northern Mali on their way to Libya, providing financing to armed groups, it also reported that the conflict between armed groups operating drug convoys led to frequent clashes with other competing groups reportedly resulting in several deaths and injuries among the different groups.[286]

Central America and Mexico: drug trafficking's links to non-State violence

Drug production and trafficking have historically been directly tied to lethal violence in Central America and Mexico, where the drug trade and clashes between different organized crime groups contribute to some of the highest homicide rates in the world, comparable to rates in conflict-affected countries.

Data suggest a large share of the homicides involve well-known organizations that have existed for decades and can be categorized under two broad headings: organized crime groups and street gangs. About 30

ak For the purposes of this chapter, the Sahel refers to the G5 Sahel: Burkina Faso, Chad, Mali, Mauritania and the Niger: https://www.g5sahel.org/

al Established pursuant to UNSC resolution 2374 (2017) which introduced a sanctions regime on Mali

am See booklet 4 of the present report, *Cocaine, Amphetamine-type stimulants and New psychoactive substances.*

per cent of homicides in El Salvador and Honduras are related to organized crime or gangs,[287] while analysis suggests that in Mexico this figure ranges between 40 and 70 per cent.[288]

Most of the organized crime groups, such as the Mexican cartels, have traditionally focused on drug trafficking, almost exclusively so until they began to fragment after 2006, when they started to become involved in other criminal enterprises.[289] In contrast, the street gangs of Central America do not appear to be deeply involved in the international drug trade.[290, 291] However, the two largest umbrella gangs – Mara Salvatrucha, commonly known as MS-13, and Barrio 18 – do sell drugs locally, in addition to their main source of income of extortion.[292] Mara Salvatrucha is particularly focused on the local drug trade, but there is little evidence that it has yet made the transition to international drug trafficking.

Both the Mexican cartels and the Central American maras use violence in conducting their criminal business, in which drugs are a central feature, but the drug trade itself predates any of the organizations operating presently.

Conclusions: the relevance of drugs in conflict

Past and current examples of conflicts, insurgencies, violence and their link with the illicit drug trade show that there is no clear path from conflict to drugs or from drugs to conflict.

The drug trade may provide resources for insurgency, and by financing conflict, may help to prolong it. In a few cases, the relationship between parties to the conflict and drugs has been symbiotic. FARC in Colombia and the Taliban in Afghanistan would probably not have had the same capabilities without the profits they received from drug production and trafficking. But in most conflicts, the link between drugs and insurgency has been opportunistic rather than interdependent. Where a drug market was established before the conflict, groups involved in the conflict have exploited it and facilitated it through protection tax and some direct involvement.

The fragility and the rule of law vacuum generated by conflict provide a fertile environment for drug production and trafficking to flourish, as demonstrated in the case of cocaine and cannabis in West Africa, while the production epicentre of certain drugs, such as methamphetamine in South-East Asia and “captagon” in the Middle East, have moved to conflict areas.

Drug seizure data relating to Syria and Myanmar suggest that conflict situations can act as a “magnet” for the manufacture of synthetic drugs, which can be produced anywhere. This effect may be amplified when the conflict area is close to big consumer markets. In Ukraine, prior to the conflict, the number of dismantled amphetamine laboratories rose from 17 in 2019 to 79 in 2020, the highest number of seized amphetamine laboratories reported in any country in 2020.[293] The laboratories were likely to have been small, but the high number seized in Ukraine before the war indicates capacity to produce synthetic drugs, which could expand as the conflict persists, following trends seen in other conflict areas.

Conflicts may also disrupt and shift drug trafficking routes, as seen during the Yugoslav Wars with heroin transit routes through the Balkans (which remains one of the key trafficking routes for opiates from Afghanistan). Data suggest that heroin trafficking through Ukraine had been increasing prior to the start of the war in February 2022.[294] The conflict may have disrupted and/or displaced these flows to neighbouring countries or alternate established routes. Monitoring is needed to determine how continuing conflict will have an impact on trafficking routes, for example for opiates from Afghanistan.

The different dynamics identified may have implications for integrating drug policy approaches in responses to ongoing crises and conflicts, and for directing law enforcement capacity building and coordination to prevent and address challenges emerging from conflict and weak rule of law.

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GLOSSARY

amphetamine-type stimulants — a group of substances composed of synthetic stimulants controlled under the Convention on Psychotropic Substances of 1971 and from the group of substances called amphetamines, which includes amphetamine, methamphetamine, methcathinone and the "ecstasy"-group substances (3,4-methylenedioxymethamphetamine (MDMA) and its analogues).

amphetamines — a group of amphetamine-type stimulants that includes amphetamine and methamphetamine.

annual prevalence — the total number of people of a given age range who have used a given drug at least once in the past year, divided by the number of people of the given age range, and expressed as a percentage.

coca paste (or coca base) — an extract of the leaves of the coca bush. Purification of coca paste yields cocaine (base and hydrochloride).

"crack" cocaine — cocaine base obtained from cocaine hydrochloride through conversion processes to make it suitable for smoking.

cocaine salt — cocaine hydrochloride.

drug use — use of controlled psychoactive substances for non-medical and non-scientific purposes, unless otherwise specified.

fentanyls — fentanyl and its analogues.

new psychoactive substances — substances of abuse, either in a pure form or a preparation, that are not controlled under the Single Convention on Narcotic Drugs of 1961 or the 1971 Convention, but that may pose a public health threat. In this context, the term "new" does not necessarily refer to new inventions but to substances that have recently become available.

opiates — a subset of opioids comprising the various products derived from the opium poppy plant, including opium, morphine and heroin.

opioids — a generic term that refers both to opiates and their synthetic analogues (mainly prescription or pharmaceutical opioids) and compounds synthesized in the body.

problem drug users — people who engage in the high-risk consumption of drugs. For example, people who inject drugs, people who use drugs on a daily basis and/or people diagnosed with drug use disorders (harmful use or drug dependence), based on clinical criteria as contained in the Diagnostic and Statistical Manual of Mental Disorders (fifth edition) of the American Psychiatric Association, or the International Classification of Diseases and Related Health Problems (tenth revision) of WHO.

people who suffer from drug use disorders/people with drug use disorders — a subset of people who use drugs. Harmful use of substances and dependence are features of drug use disorders. People with drug use disorders need treatment, health and social care and rehabilitation.

harmful use of substances — defined in the International Statistical Classification of Diseases and Related Health Problems (tenth revision) as a pattern of use that causes damage to physical or mental health.

dependence — defined in the International Statistical Classification of Diseases and Related Health Problems (tenth revision) as a cluster of physiological, behavioural and cognitive phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.

substance or drug use disorders — referred to in the Diagnostic and Statistical Manual of Mental Disorders (fifth edition) as patterns of symptoms resulting from the repeated use of a substance despite experiencing problems or impairment in daily life as a result of using substances. Depending on the number of symptoms identified, substance use disorder may be mild, moderate or severe.

prevention of drug use and treatment of drug use disorders — the aim of "prevention of drug use" is to prevent or delay the initiation of drug use, as well as the transition to drug use disorders. Once a person develops a drug use disorder, treatment, care and rehabilitation are needed.

REGIONAL GROUPINGS

The *World Drug Report* uses a number of regional and subregional designations. These are not official designations, and are defined as follows:

AFRICA

- East Africa: Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Somalia, South Sudan, Uganda, United Republic of Tanzania and Mayotte
- North Africa: Algeria, Egypt, Libya, Morocco, Sudan and Tunisia
- Southern Africa: Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe and Reunion
- West and Central Africa: Benin, Burkina Faso, Cabo Verde, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, Togo and Saint Helena

AMERICAS

- Caribbean: Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Anguilla, Aruba, Bonaire, Netherlands, British Virgin Islands, Cayman Islands, Curaçao, Guadeloupe, Martinique, Montserrat, Puerto Rico, Saba, Netherlands, Sint Eustatius, Netherlands, Sint Maarten, Turks and Caicos Islands and United States Virgin Islands
- Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama
- North America: Canada, Mexico, United States of America, Bermuda, Greenland and Saint-Pierre and Miquelon
- South America: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela (Bolivarian Republic of) and Falkland Islands (Malvinas)

ASIA

- Central Asia and Transcaucasia: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan
- East and South-East Asia: Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Singapore, Thailand, Timor-Leste, Viet Nam, Hong Kong, China, Macao, China, and Taiwan Province of China
- South-West Asia: Afghanistan, Iran (Islamic Republic of) and Pakistan
- Near and Middle East: Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen and State of Palestine
- South Asia: Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka

EUROPE

- Eastern Europe: Belarus, Republic of Moldova, Russian Federation and Ukraine

- South-Eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Romania, Serbia, Türkiye[an] and Kosovo[ao]
- Western and Central Europe: Andorra, Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, Faroe Islands. Gibraltar and Holy See

OCEANIA

- Australia and New Zealand: Australia and New Zealand
- Polynesia: Cook Islands, Niue, Samoa, Tonga, Tuvalu, French Polynesia, Tokelau and Wallis and Futuna Islands
- Melanesia: Fiji, Papua New Guinea, Solomon Islands, Vanuatu and New Caledonia
- Micronesia: Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Palau, Guam and Northern Mariana Islands

an Further to the communication dated 31 May 2022 from the permanent mission addressed to the Executive Office of the Secretary-General, the country name was changed from the former name of the Republic of Turkey (former short form: Turkey), with immediate effect. The *World Drug Report 2022* was prepared before that date and thus uses the former name in its reporting and analysis, except for the maps that were finalized more recently.

ao References to Kosovo shall be understood to be in the context of Security Council resolution 1244 (1999).

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UNODC Research

Consisting of five separate booklets, the *World Drug Report 2022* provides an in-depth analysis of global drug markets and examines the nexus between drugs and the environment within the bigger picture of the Sustainable Development Goals, climate change and environmental sustainability.

Booklet 1 summarizes the four subsequent booklets by reviewing their key findings and highlighting policy implications based on their conclusions. Booklet 2 provides an overview of the global demand for and supply of drugs, including an analysis of the relationship between illicit drug economies and situations of conflict and weak rule of law. Booklet 3 reviews the latest trends in the global markets for opioids and cannabis at the global and regional levels, and includes a discussion of the potential impact of changes in opium poppy cultivation and opium production in Afghanistan, and an analysis of early indications of the impact of cannabis legalization on public health, public safety, market dynamics and criminal justice responses in selected jurisdictions. Booklet 4 presents the latest trends in and estimates of the markets for various stimulants – cocaine, amphetamines and "ecstasy" – and new psychoactive substances, both at the global level and in the most affected subregions, including an analysis of different coca bush eradication strategies and a focus on the expansion of the methamphetamine market in South-West Asia. Booklet 5 delves into the nexus between drugs and the environment, providing a comprehensive overview of the current state of research into the direct and indirect effects of illicit drug crop cultivation and drug manufacture, as well as drug policy responses on the environment.

The *World Drug Report 2022* is aimed not only at fostering greater international cooperation to counter the impact of the world drug problem on health, governance and security, but also, with its special insights, at assisting Member States in anticipating and addressing threats from drug markets and mitigating their consequences.

The accompanying statistical annex is published on the UNODC website:
www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2022.html