Trends in Substance Use Among Young People in the EU: A Secondary Analysis of Available Data

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INTRODUCTION: Substance use among adolescents in the European Union constitutes a significant public health challenge. Particularly concerning are the early onset of use, patterns of polydrug consumption, and the emergence of novel psychoactive substances. This study examines prevailing trends and associated mental health risks through a secondary analysis of available data sources. **METHODS:** The study employs secondary analysis of quantitative data from international and national databases (EMCDDA, ESPAD, Euro-DEN Plus, Public Health England), focusing on adolescents aged 10–24 years. The analysis centres on prevalence rates, types of substances used, age of initiation, and gender-based differences.
RESULTS: The results indicate a high prevalence of cannabis, alcohol, and novel psychoactive substance use among adolescents, with the majority initiating use before the age of 15. Polydrug use is predominant, mental health disorders are common, and girls exhibit greater vulnerability. Regional disparities highlight the uneven effectiveness of prevention efforts across the EU.
CONCLUSIONS: The conclusion highlights the need for early, gender-sensitive prevention and targeted interventions, as well as harmonised data collection across the EU. The growing prevalence of substance use and associated mental health challenges among adolescents calls for a multidisciplinary approach, integrated service delivery, and strengthened mental health support as a core component of public health systems.

Keywords | Adolescent substance use, New psychoactive substances (NPS), Polydrug use behaviour, Youth mental health, European drug policy

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1 INTRODUCTION

Substance use among adolescents represents an escalating public health concern for European Union member states, persisting despite advancements in prevention, treatment, and legislative frameworks. A secondary analysis of data from international sources (EMCDDA, ESPAD, Euro-DEN Plus) reveals a consistently high prevalence of psychoactive substance use, including a marked increase in polydrug use, early initiation, and the proliferation of novel psychoactive substances (NPS). These trends are further exacerbated by deteriorating adolescent mental health, gender-specific vulnerabilities, and the influence of social determinants.

Adolescence is a critical developmental period during which the brain is particularly susceptible to the neurotoxic effects of substances such as alcohol, nicotine, and cannabis (Gray & Squeglia, 2017). These substances remain the most used, with cannabis identified as the primary drug among 90% of adolescents entering treatment, and alcohol persisting as the most prevalent substance in Western and Central Europe. Alarming trends are also evident in the use of e-cigarettes and volatile substances, as well as in the rapidly evolving spectrum of NPS, which accounted for 23.3% of all acute drug toxicity cases in Bratislava in 2023.

A significant proportion of adolescents initiate substance use before the age of 15, underscoring the need for early prevention strategies within educational settings. Approximately half of all adolescents report a need for psychological or psychiatric support, with this figure reaching as high as 65% among girls. Gender differences manifest not only in symptom prevalence (e.g., self-harm, trauma) but also in access to care and patterns of help-seeking behaviour.

This study aims to identify the key trends in adolescent substance use across the EU through a secondary analysis of existing data, with a particular focus on age of initiation, substance typology, gender differences, and associated psychological dimensions. The findings provide a foundation for developing targeted prevention strategies and support the implementation of an integrated approach to adolescent public health policy.

2 LITERATURE REVIEW

Substance use during adolescence represents a significant socio-health phenomenon with profound implications for physical, psychological, and social well-being. This developmental period is marked by neurobiological vulnerability, psychosocial maturation, and a heightened propensity for experimentation (Gray & Squeglia, 2017; Coelho et al., 2021). Research indicates that adolescents often initiate substance use with alcohol and tobacco, which act as gateway substances to illicit drugs (Griffin et al., 2019; Hall et al., 2016). In Slovakia, a study by Vavrová and Rojková (2020) documented a decline in experimentation with marijuana and smoking among youth aged 12–19, with notable differences across gender and age groups. Pitel et al. (2010) emphasised the impact of urbanisation, particularly among girls, on increased use of tobacco, alcohol, and cannabis.

Leisure activities and media use also show significant correlations with substance use. Rojková and Mydlová (2019) found a weak but statistically significant association between time spent online and the use of substances, particularly alcohol and tobacco. Rojková and Kurajda (2023) observed higher rates of alcohol consumption among adolescents who combined internet use with in-person socialising. Situational and motivational factors, such as stress, depression, or loneliness, play a critical role in substance use (Connolly et al., 2024; Rojková & Vavrová Górna, 2020). Problem avoidance is a risk factor, while family support functions as a protective buffer. Brennan et al. (2024) identified older age, male gender, externalising disorders, and abusive environments as key predictors of substance use.

Globally, Degenhardt et al. (2016) and Peacock et al. (2018) highlighted the substantial health burden attributable to substance use, with the highest disability-adjusted life years (DALYs) linked to tobacco and alcohol. The highest prevalence rates were observed among young men aged 20–24. In sub-Saharan Africa, the most used substances include alcohol, khat, and stimulants, often initiated at an early age (Ebrahim et al., 2024). Similarly, in Portugal, the average age of initiation is around 14, with cultural norms and family background playing a pivotal role (Silva et al., 2018).

The neurobiological consequences of adolescent substance use are severe. Alcohol, nicotine, and cannabis may induce long-term structural brain changes and impair emotional regulation (Karaaziz & Söyler, 2024; Steinfeld & Torregrossa, 2023). Abreu-Villaça et al. (2017) demonstrated that concurrent use of tobacco and alcohol reduces cessation success and increases the risk of mood disorders. Mentalisation, a key psychological construct, is also linked to use patterns—lower levels of mentalisation are associated with higher substance use (Imperatori et al., 2020).

Young individuals with serious mental illness exhibit elevated rates of cannabis and tobacco use, which are associated with more severe psychiatric symptoms, though not with increased hospitalisation (Ferron et al., 2024). Tarantino et al. (2022) further noted the connection between substance use, unhealthy lifestyle habits, and the development of non-alcoholic fatty liver disease (NAFLD). Prevention efforts must be developmentally tailored and multifaceted to be effective. Evidence shows that educational programs alone are insufficient, while skill-based interventions are significantly more effective (Stockings et al., 2016). Screening and brief interventions, such as those recommended by the American Academy of Paediatrics (2020), are critical, and public health nurses and paediatricians play an essential role in early detection and intervention (Bukecik, 2024).

Peer-led interventions have shown effectiveness in reducing tobacco and cannabis use (MacArthur et al., 2016), whereas universal school-based programs demonstrate limited impact (Tinner et al., 2022). Given the limited efficacy of current prevention measures, Griffin et al. (2019) advocate focusing on reducing early tobacco and alcohol use as predictors of future illicit drug consumption. Addiction is a chronic condition often originating during adolescence (Kumar et al., 2019), with early initiation strongly associated with long-term health and social consequences, including mental health issues, legal problems, and academic failure (Brennan et al., 2024).

The growing recreational and therapeutic use of psychedelic and dissociative substances among youth remains under-researched (Bates & Trujillo, 2021). There is a lack of data on long-term outcomes and gender-specific responses to these substances.

In conclusion, adolescent substance use is shaped by an interplay of biological, psychological, social, and environmental factors. Despite progress in research and prevention, the effectiveness of existing interventions remains limited, particularly among high-risk subgroups and in under-resourced regions. Greater investment in evidence-based research and policy is essential, with a focus on developmentally and culturally responsive strategies tailored to the needs of this vulnerable population.

3 METHODS

This publication aimed to identify and analyse key trends in substance use among young people in European Union (EU) countries. To achieve this objective, a secondary analysis of quantitative data was conducted, drawing on authoritative international and national sources, including EMCDDA, ESPAD, Euro-DEN Plus, and Public Health England. The study focused on individuals aged 10 to 24, with particular attention paid to adolescents under 18 years old. It explored the prevalence of substance use, age of initiation, most consumed substances, gender-based differences, the occurrence of polydrug use, and associations with mental health and psychosocial risk factors. The methodology also included cross-country comparisons within the EU, highlighting regional disparities between Eastern and Western Europe. As part of the Euro-DEN Plus network, data from Slovakia were included, emphasising the marked increase in cases of acute intoxications involving new psychoactive substances (NPS). The dataset was further enriched with information from global organisations such as the WHO, UNODC, OECD, and INCB, as well as insights from contemporary scientific literature.

The primary target population consisted of adolescents and young adults in EU member states, with a particular focus on individuals aged 18 and under, as well as those aged 18 to 25, in the context of emergency admissions. The analysis covered trends and disparities across EU countries, with some sources, including Euro-DEN Plus and ESPAD, also covering selected non-EU European nations. Trends were examined over time, accounting for regional specificities such as the Eastern–Western divide. Focus was placed on the rising prevalence of NPS.

It is essential to acknowledge that the quality and availability of existing data impose limitations on secondary analysis. Variability in data collection methodologies, case reporting, and classification systems across healthcare, education, and social services may affect comparability and pose constraints. Moreover, some datasets only reflect individuals entering treatment, which may not be representative of the broader population of users. The COVID-19 pandemic also impacted data collection and user behaviour.

The applied secondary analysis enabled the identification of prevailing trends, assessment of regional variations, and elucidation of connections between substance use and other risk factors among youth in the EU. The findings provide evidence for policy recommendations and professional strategies that aim to strengthen prevention and intervention efforts.

4 RESULTS

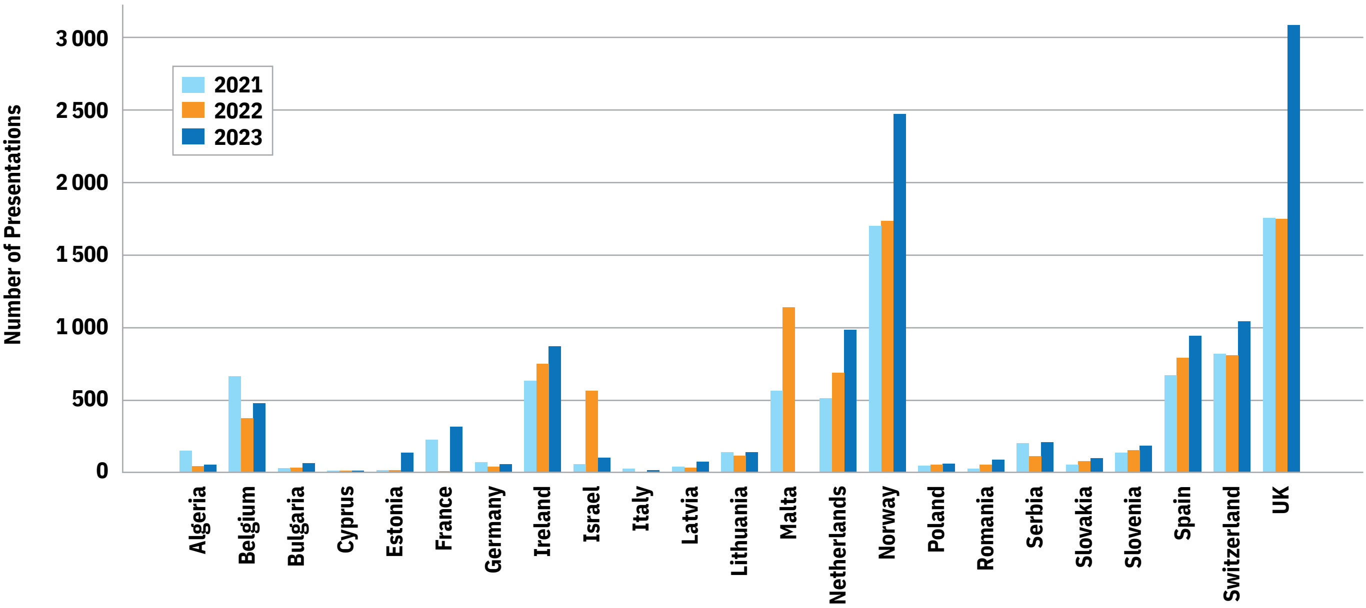
Over the past decade, drug policy and substance use dynamics in Europe have undergone substantial transformation, marked by pronounced shifts across legislative frameworks, international cooperation, and the emergence and distribution of various drug types. Significant changes in drug availability and quality, intensified trafficking, and evolving user preferences have impacted not only youth drug consumption patterns but also the capacity of preventive and treatment systems across EU member states.

One of the most prominent trends has been the rising availability of high-purity cocaine on the European market. While its use was once concentrated primarily in Western and Southern Europe, recent years have witnessed increasing prevalence in Central and Eastern European countries. Record seizures in Belgium, Germany, and France between 2018 and 2019 further underscore the widespread circulation of this substance and point to new transit routes through overseas EU territories, such as French Guiana and Martinique, which act as logistical hubs between South America and Europe (EMCDDA, 2019; UNODC, 2020).

The cannabis market has similarly evolved, driven by growing demand for medical cannabis. Countries such as Portugal, Malta, Belgium, and Croatia have enacted legislation permitting the cultivation and distribution of cannabis for therapeutic purposes, introducing new regulatory models to ensure safety and quality. Pilot programs for limited recreational use are being tested in the Netherlands and Luxembourg, raising questions of alignment with UN conventions (INCB, 2021).

Regulatory bodies also face mounting challenges with the rapid emergence of new psychoactive substances (NPS). Between 2018 and 2019, 55 new NPS were identified in the EU alone. Nations like Poland, Sweden, Germany, and Croatia responded with generic legislative frameworks, enabling bans on entire substance groups rather than individual compounds. Nevertheless, NPS distribution continues via online platforms, the darknet, and private courier services, complicating enforcement (UK Home Office, 2018). In harm reduction, drug consumption rooms—supervised facilities for safer drug use—are increasingly adopted in countries such as Germany, the Netherlands, Spain, and Portugal. These centres aim to reduce overdoses, infections, and injection-related mortality while serving as contact points for treatment and social reintegration (INCB, 2020; EMCDDA, 2021). While the opioid crisis in Europe remains less severe than in the U.S., certain countries report growing misuse of synthetic opioids such as fentanyl, tramadol, and buprenorphine. In Estonia, fentanyl has overtaken heroin as the primary opioid, reflected in mortality statistics (OECD, 2019). In Scotland, 67% of drug-related deaths in 2019 were associated with polydrug use involving opioids, benzodiazepines, and alcohol (NHS, 2019).

Figure 1 | Number of acute drug toxicity presentations by country (2021-2023)



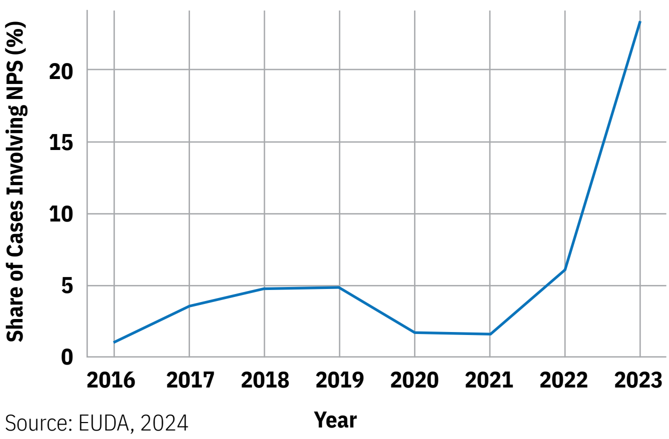
Source: EUDA, 2024

Simultaneously, the quality of data systems in drug policy is improving. Nations such as Poland and Belgium have invested in extensive research projects targeting diverse populations, from youth to incarcerated individuals. These data serve as a foundation for evidence-based prevention and targeted interventions at both the local and national levels. These developments underscore the urgent need for coordinated European strategies that harmonise legislative, preventive, and treatment approaches, with an emphasis on scientific evidence, regional cooperation, and swift responsiveness to emerging drug-related phenomena.

The Euro-DEN Plus network functions as a sentinel surveillance system for monitoring acute drug-related intoxications presenting to emergency departments across 22 European centres (as of 2023), encompassing EU member states, Norway, and Turkey. It provides real-time data on intoxications caused by classical illicit drugs, novel psychoactive substances (NPS), and prescription medications misused for recreational purposes. Data from 2023 indicate a marked predominance of male patients, with men accounting for 75% of cases in half of the reporting centres. The age distribution revealed significant regional differences, with patients over 25 years of age predominating in Western Europe. At the same time, younger individuals were more frequently observed in Eastern countries, such as Slovakia, Lithuania, and Latvia. Polydrug use was reported across all centres and is likely underrepresented in current statistics due to limitations in data completeness. Admission to intensive care units was required in fewer than 2% of cases, highlighting variability in the structure and delivery of emergency medical care across countries. These findings underscore the necessity for targeted prevention strategies that are sensitive to gender, age, and regional contexts, and for the continued harmonisation of monitoring systems to support evidence-based public health interventions.

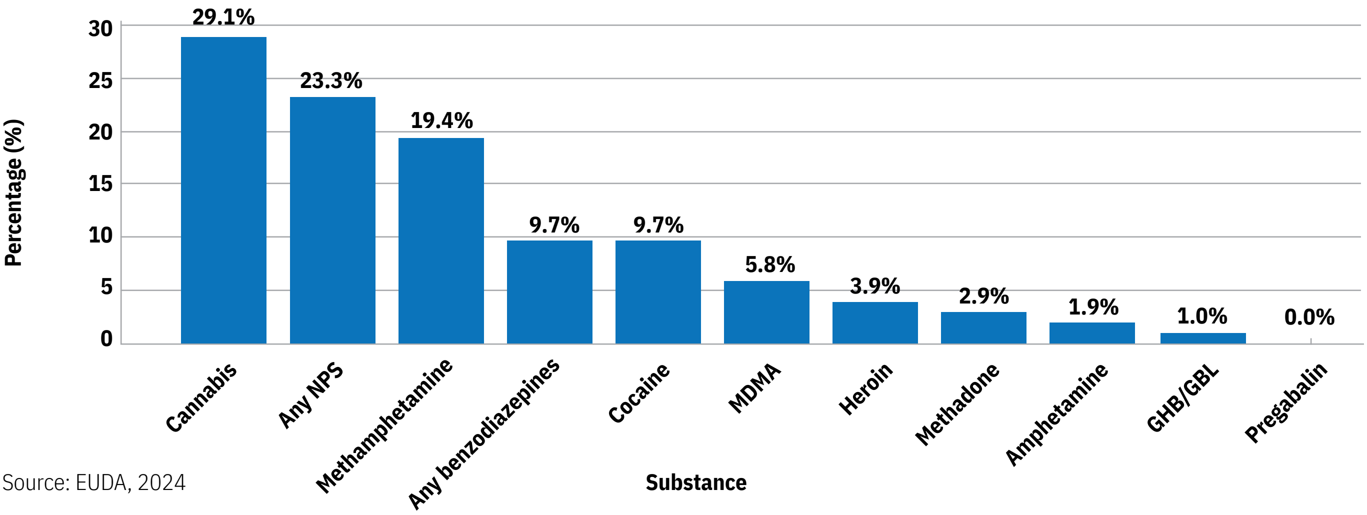
Figure 1 illustrates the year-on-year trends in the number of acute drug toxicity cases recorded across individual countries from 2021 to 2023. The visualisation compares data collected through the Euro-DEN Plus network within a three-year timeframe, allowing for the identification of both geographic and temporal disparities in the burden of drug-related emergency department presentations. The highest number of presentations in 2023 was reported in the United Kingdom (3,093 cases), followed by Norway (2,473 cases) and Switzerland (1,048 cases). These countries consistently exhibited high incidence rates throughout all three years, which may reflect factors such as drug availability, the structure of their healthcare systems, and the quality and comprehensiveness of their data collection systems (EUDA, 2024). A marked increase in presentations between 2021 and 2023 was observed in several countries, including Estonia (from 18 to 136 cases), Slovakia (from 59 to 103), and Malta (from 568 to 1,134), potentially indicating either a genuine rise in acute drug toxicity or improvements in case reporting and surveillance systems. Conversely, countries such as Cyprus, Italy, and Bulgaria reported lower presentation rates, which may be attributed to local drug market characteristics, limited data coverage, or national variations in case classification protocols (EUDA, 2024).

Figure 2 | Prevalence of new psychoactive substances (NPS) in acute drug toxicity cases



Source: EUDA, 2024

Figure 3 | Proportion of acute drug toxicity presentations by substance (2023)



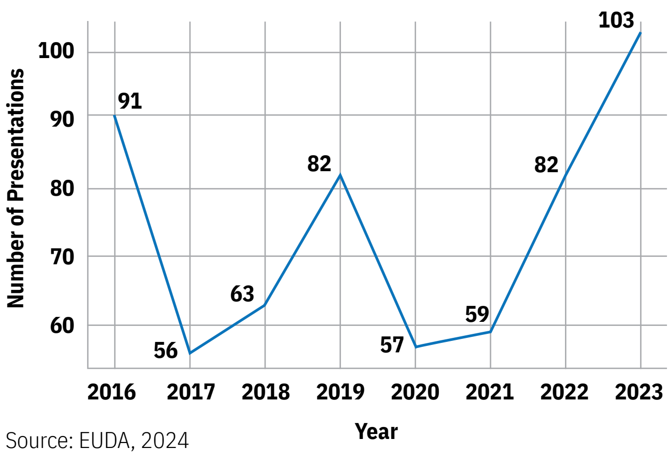
Source: EUDA, 2024

In 2023, a total of 103 cases of acute drug intoxication (i.e., emergency department presentations with this diagnosis) were recorded at the monitoring centre in Bratislava. Figure 2 illustrates the trend in the proportion of acute intoxications involving newly identified psychoactive substances (NPS) in Bratislava, the capital of the Slovak Republic, from 2016 to 2023. A significant increase was observed in 2023, when the proportion of NPS-related cases reached 23.3 %—more than triple the rate reported in 2022 and markedly higher than in previous years. This sharp rise may reflect shifts in the availability, distribution, or popularity of NPS among users, underscoring the urgent need to enhance analytical capacity and implement targeted preventive measures in this domain (EUDA, 2024).

Figure 3 presents the percentage distribution of specific psychoactive substances involved in acute drug intoxication cases recorded in 2023 within the Euro-DEN Plus network. The data show that cannabis was the most frequently detected substance, appearing in 29.1 % of all presentations. The second most common group were new psychoactive substances (NPS), identified in 23.3 % of cases, representing a substantial increase compared to previous years. Methamphetamine ranked third, present in 19.4 % of cases, highlighting its growing prevalence, particularly in Eastern and Northeastern Europe. Other notable substances included benzodiazepines (9.7 %) and cocaine (9.7 %), both of which maintain a well-established presence in recreational and high-risk drug use contexts. MDMA (5.8 %) and heroin (3.9 %) showed moderate prevalence; however, heroin, a traditional opioid, is gradually being supplanted in some regions by alternatives such as fentanyl derivatives. Methadone (2.9 %), amphetamine (1.9 %), and GHB/GBL (1.0 %) were also recorded, while pregabalin was the only substance with zero recorded cases in 2023 (EUDA, 2024). These findings underscore the evolving and diverse nature of the European drug landscape and highlight the importance of ongoing surveillance and early detection of emerging trends in acute intoxications. The graph also reflects geographical and demographic differences in substance use patterns and emphasises the critical role of polydrug use in escalating health risks associated with psychoactive substance consumption.

Figure 4 illustrates the temporal evolution of acute drug-related presentations in Bratislava from 2016 to 2023, based on data collected within the Euro-DEN Plus network. The findings reveal notable annual fluctuations in the number of recorded cases, with the lowest figures observed in 2017 (56 cases) and 2020 (57 cases). These declines may be partially attributed to the impact of the COVID-19 pandemic, which disrupted access to healthcare and influenced user behaviour. Following a period of relatively lower incidence in 2020 and 2021, a sharp increase occurred, culminating in 103 cases in 2023, the highest number recorded in the examined period. This rise may reflect not only an actual increase in drug-related intoxication but also improved detection and reporting mechanisms across sentinel sites, as well as changes in the composition and potency of substances circulating in the illicit drug market.

Figure 4 | Total Number of Drug-Related Emergency Presentations (2016-2023)



Source: EUDA, 2024

From an analytical perspective, the data underscore the critical need for continuous monitoring of drug toxicity trends. The evolving number of presentations highlights the importance of integrating hospital-based indicators with complementary sources, such as wastewater analysis, harm reduction services, and forensic data, to construct a comprehensive picture of the drug situation in Slovakia and across Europe. These insights are essential for informing targeted public health strategies, particularly in the post-pandemic context marked by dynamic shifts in patterns of psychoactive substance use.

A secondary data analysis covering the period from April 2022 to March 2023 indicates an increase in the number of young people (under 18) entering treatment for substance use. A total of 12,418 individuals were recorded, marking a 10% increase compared to the previous year. However, this remains 13% lower than in 2019/2020, when 14,291 adolescents received treatment (Public Health England, 2023).

Cannabis remained the most reported substance, cited as the primary reason for treatment in 87% of cases. Alcohol was problematic for 44%, powder cocaine for 9%, and ecstasy for 7% of clients. The number of young individuals seeking help for codeine and benzodiazepines decreased over the past two years (from 1.2% to 0.8% and 3.7% to 2%, respectively). Conversely, there was a notable increase in cases involving volatile substances (from 329 to 629) and ketamine (from 512 to 719). The data highlights the psychosocial vulnerability of youth in treatment: 79% began using substances before the age of 15, and 56% reported polydrug use. Significant gender differences were also observed—self-harm was reported by 51% of girls compared to 17% of boys, and experiences of sexual abuse were noted by 11% of girls versus 1.5% of boys. An alarming trend is the rising need for mental health support, reported by 48% of youth upon treatment entry, up from 32% in 2018/2019. Girls were again overrepresented (65% vs. 39% of boys), with 71% receiving psychological or psychiatric care, primarily through community services.

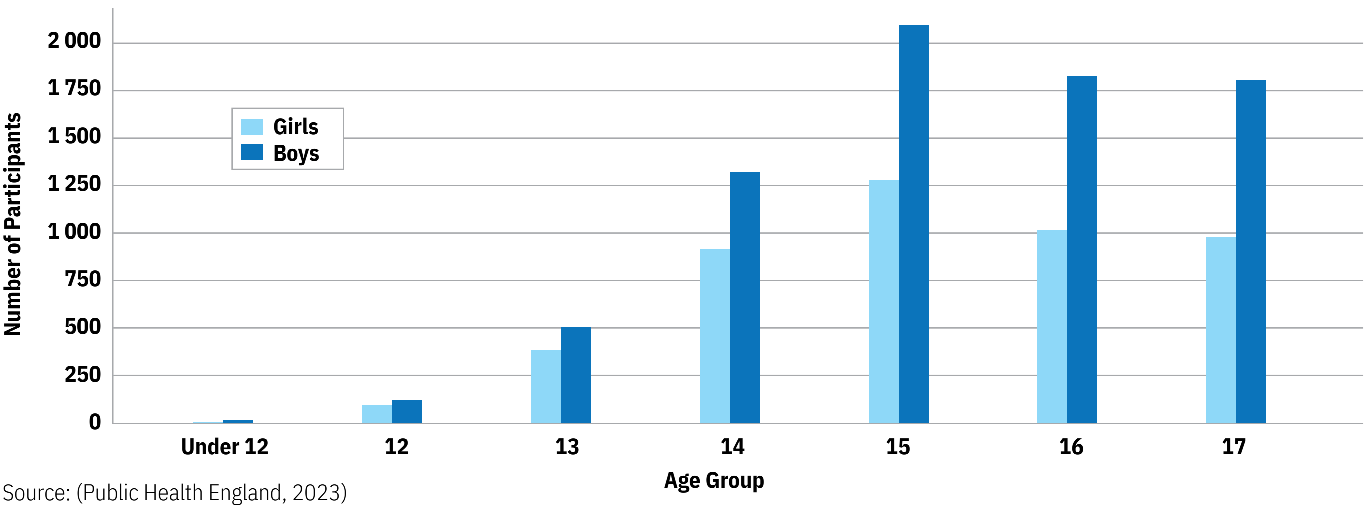
Treatment outcomes were relatively positive, with 83% of participants completing the program successfully and only 12% discontinuing prematurely. These outcomes suggest stable engagement in treatment; however, they must be contextualised within broader support and prevention frameworks.

From April 1, 2022, to March 31, 2023, a total of 12,418 adolescents received structured treatment through drug and alcohol support services, with males comprising approximately 62% of cases—a consistent trend with previous years. The median age was nearly 16 for both sexes. Notably, 1,188 children under the age of 14 received treatment, representing about 10% of all cases, a proportion that has remained relatively low (Public Health England, 2023).

Figure 5 illustrates the number of young individuals (under 18 years of age) who reported problems with specific psychoactive substances during treatment in the period 2022–2023. The most frequently reported substance was cannabis (10,837 cases), followed by alcohol (5,409) and nicotine (1,737). Substances such as crack, heroin, and other opioids were reported significantly less frequently. The graph highlights the dominant role of cannabis among youth in treatment and underscores the need for targeted prevention efforts in this domain. Available data from the 2022/2023 report indicate that cannabis continues to be the most commonly cited substance among adolescents in treatment (87%), reflecting its progressive normalisation within youth culture and its perception as a "low risk" drug (EMCDDA, 2023). This trend necessitates a strengthened focus on risk-reduction-based prevention, as well as the development of intervention strategies that are responsive to the evolving attitudes and beliefs of the younger generation (UNODC, 2022).

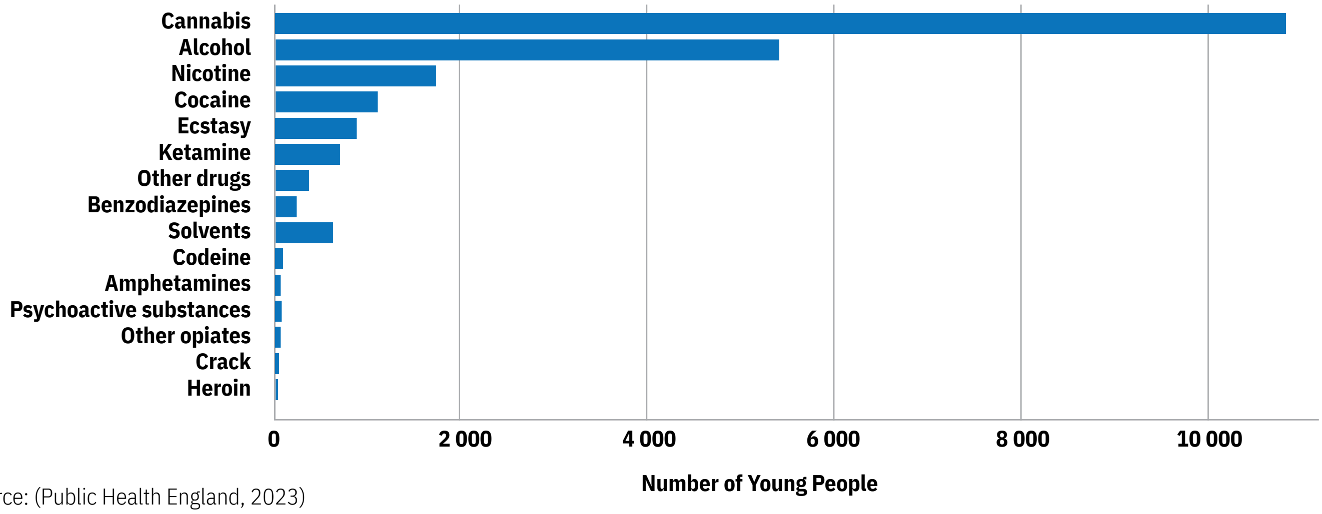
Figure 6 illustrates the number of young people in treatment according to the type of psychoactive substance reported as the primary reason for seeking treatment during the 2022–2023 period. The data indicate that cannabis remains the most frequently cited substance, with over 10,000 adolescents identifying it as the main issue. Alcohol ranked second, reported in approximately 5,000 cases, followed by nicotine. Other substances, such as cocaine, ecstasy, ketamine, and those grouped under "other drugs", followed in frequency. Benzodiazepines, solvents, codeine, amphetamines, psychoactive substances, opiates, crack, and heroin were cited far less frequently, likely reflecting lower prevalence in this age cohort or reduced treatment engagement for these substances, rather than reduced risk.

Figure 5 | Number of Girls and Boys by Age Group in Treatment for Drug and Alcohol-Related Problems from 2022 to 2023



Source: (Public Health England, 2023)

Figure 6 | Substances reported by young people in treatment (2022-2023)



Source: (Public Health England, 2023)

A growing concern is the increasing prevalence of polydrug use—nearly 56% of adolescents reported using two or more substances concurrently. This pattern is closely linked to mental health challenges, reported by 48% of all clients, with a higher prevalence among girls (65% vs. 39% in boys). These findings underscore the intersection between substance use and mental health, requiring an integrated treatment approach (ESPAD, 2019; WHO, 2024). Despite a 10% year-on-year increase in treatment engagement, the number remains 13% lower than in 2019, likely due to pandemic-related disruptions and limited access to services in some regions (Public Health England, 2023). Sharp increases in ketamine (+40%) and solvent (+91%) use highlight evolving consumption patterns that necessitate ongoing adaptation of prevention strategies (UK Drug Misuse Report, 2023).

Gender-specific vulnerabilities are evident, particularly among girls reporting significantly higher rates of self-harm (51% vs. 17%) and sexual abuse experiences (11% vs. 1.5%). This calls for gender-sensitive approaches across all stages of intervention (YRBSS, 2023; EMCDDA, 2023). Encouragingly, 83% of adolescents completed treatment successfully, indicating that when services are age-appropriate, accessible, and well-targeted, they can be highly effective. However, only 10% of cases involved individuals under age 14, suggesting potential under-detection of problematic use in this critical developmental phase (Public Health England, 2023; WHO, 2024).

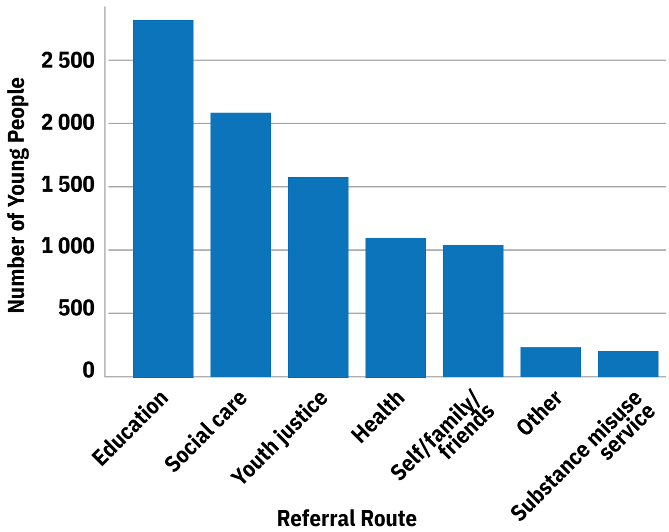
In 2022/2023, the most common referral pathway by which young people accessed specialised treatment services was through educational institutions, accounting for 31% of all treatment entries (Figure 7). This proportion is nearly identical to that of the previous reporting year (2021/2022), at 32%, and significantly higher than in 2020/2021, when it stood at just 18%.

During the first year of the COVID-19 pandemic, referrals from educational settings dropped dramatically—by 60%—compared to a 16% decline in referrals from other sources. This trend can be primarily attributed to the suspension of in-person schooling, the disruption of student-staff interactions, and a reduction in the identification of risky behaviour within schools. By 2022/2023, the number of referrals from education had nearly returned to pre-pandemic levels, with 2,796 recorded cases, compared to 3,196 in the 2019/2020 period.

The second most common referral source was social care, accounting for 23% of all treatment admissions. This proportion remained stable compared to the previous year (2021/2022), highlighting the consistent role of social services in identifying and referring at-risk youth to specialised care.

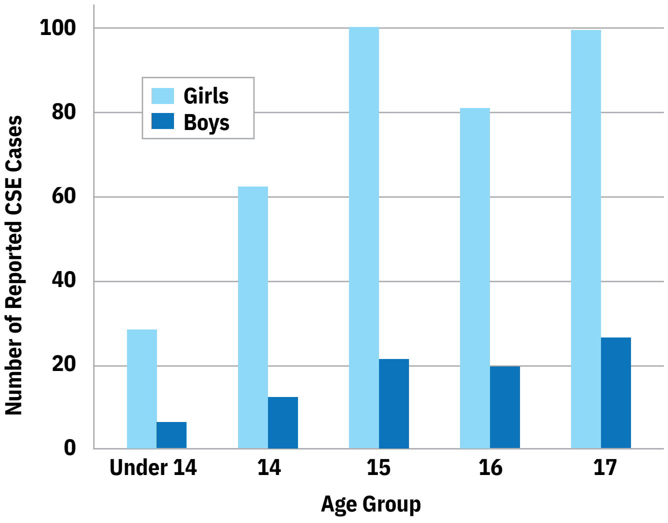
These findings underscore the crucial role of cross-sectoral collaboration among educational institutions, social services, and healthcare providers in the early identification of substance-related issues and the prompt implementation of professional interventions. The reactivation of school-based referral mechanisms post-pandemic represents a positive signal for more effective outreach to vulnerable young people.

Figure 7 | Referral pathways of young people to specialist treatment in 2022–2023



Source: (Public Health England, 2023)

Figure 8 | Number of young people reporting CSE by age and gender (2022-2023)



Source: (Public Health England, 2023)

According to the official definition of the UK Department for Education, Child Sexual Exploitation (CSE) is a specific form of sexual abuse. It occurs when an individual or group exploits an imbalance of power to coerce a child or adolescent under the age of 18 into sexual activity, in exchange for something the victim needs or desires, or for the perpetrator's financial gain or social status. It is important to emphasise that CSE may occur even when the act appears consensual. Moreover, CSE can happen without physical contact, such as through digital technologies, including social media and online communication (Public Health England, 2023).

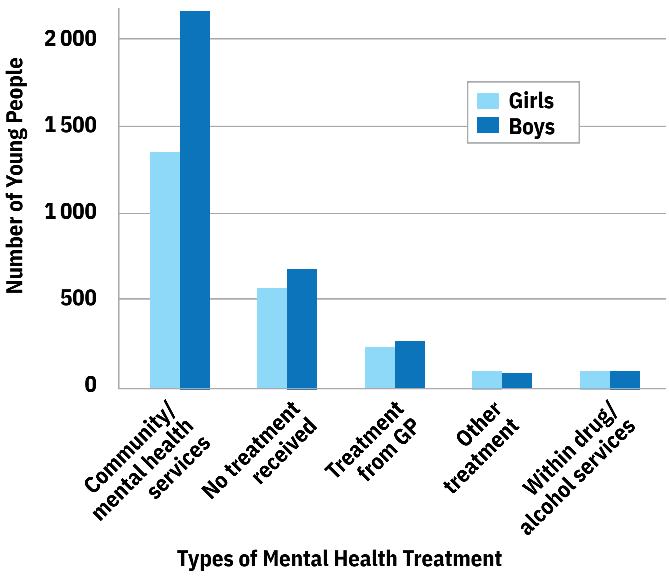
In the 2022/2023 reporting period, a total of 455 young individuals (representing 5% of all clients in treatment) reported having experienced child sexual exploitation (CSE) (Figure 8). Age-specific analysis revealed the highest prevalence among 17-year-olds (6%), followed by those aged 16 and 15 (both at 5%), and children aged 14 and under (4%). A gender-based comparison shows a pronounced disparity: CSE was reported significantly more frequently by girls than boys. Among all female clients entering treatment, 11% (371 individuals) disclosed such experiences, compared to just 2% (84 individuals) of male clients. This substantial difference underscores a gender-specific vulnerability that necessitates a differentiated approach in both prevention and therapeutic intervention. Further age stratification revealed that 13% of girls aged 15 and older reported CSE experiences, compared to 8% among those aged 14 and younger. Among boys, the prevalence remained below 2% across both age groups, suggesting not only a lower incidence but potentially also a lower likelihood of disclosure or recognition of CSE among male adolescents.

These findings affirm that sexual exploitation constitutes a relevant yet often underreported dimension of psychosocial risk in young people undergoing substance use treatment. Particular attention is warranted for older adolescent girls, who appear to represent the most vulnerable subgroup.

Figure 9 illustrates that nearly 48% (n = 4,325) of adolescents entering substance use treatment during the 2022/2023 period reported a concurrent need for psychiatric or psychological care. This need was markedly more prevalent among girls (65%) compared to boys (39%), highlighting gender-specific differences in the perception and recognition of mental health issues among adolescents. Of those who reported a need for mental health care, 71% were already engaged with some form of psychiatric or psychological support at the time of treatment entry. This proportion was slightly higher among girls (74%) than boys (69%), suggesting greater help-seeking behaviour and receptiveness to therapeutic services among female clients.

Most adolescents requiring mental health support (59%) were already involved with community-based or specialised mental health services before initiating substance use treatment. Specifically, this included 1,358 girls and 1,207 boys who had existing interactions with mental health professionals. Additional clients received assistance from general practitioners (237 girls and 266 boys) or through services provided directly by substance use treatment facilities (98 girls and 98 boys). A smaller subgroup accessed secure mental health stabilisation units (62 girls and 47 boys) or participated in NHS-provided "talking therapy" programs focused on anxiety and depression management (41 girls and 33 boys). Nevertheless, 29% of adolescents (569 girls and 679 boys) with identified mental health care needs were not utilising, or actively declined, such services at the time of treatment entry. This points to persistent barriers to care, potentially linked to stigma, limited service availability, or low motivation among youth to engage in mental health treatment.

Figure 9 | Sources of Psychiatric Care Among Adolescents in Substance Use Treatment (2022–2023)



Source: (Public Health England, 2023)

The findings confirm the strong interconnection between substance use and the need for mental health intervention among adolescents. They underscore the necessity for systemic coordination between addiction services and psychiatric care, as well as the need for targeted mental health education for young people.

4.1 International Comparison of Substance Use Trends Among Adolescents in EU Countries

The 2024 ESPAD report highlights substantial cross-national and gender-based disparities in the prevalence and patterns of substance use among adolescents across EU countries. These differences are shaped not only by national drug policies but also by cultural and social contexts, substance availability, norms surrounding risk behaviour, and the scope of prevention initiatives (ESPAD, 2024).

- **Cigarette and E-Cigarette Use**: Slovakia ranks among the countries with the highest lifetime prevalence of cigarette use (46%), just behind Hungary (51%), while Iceland (13%) and Malta (16%) report the lowest rates. E-cigarette use follows a similar pattern, with Hungary (57%) and Poland (36%) showing the highest current use, while Portugal and Malta report the lowest rates. Notably, girls in Liechtenstein and Malta more frequently use e-cigarettes than boys, underscoring the need for gender-sensitive prevention strategies.

- **Alcohol Consumption**: Alcohol remains the most widely used psychoactive substance among European adolescents. Lifetime consumption is highest in Hungary (91%) and Denmark (90%), but significantly lower in Kosovo (29%) and Iceland (41%). Despite a general decline in binge drinking, high rates persist in Denmark (36%) and Austria (24%). Malta and Ukraine report higher intoxication rates among girls, challenging traditional gender norms around alcohol use.

- **Cannabis Use**: Lifetime cannabis use peaks in the Czech Republic (24%) and Liechtenstein (23%), while Moldova (2.5%) and Georgia (3.3%) report the lowest levels. Although boys tend to use cannabis more frequently, Malta shows the opposite trend (14% girls vs. 8.6% boys), reflecting shifting attitudes and the impact of cannabis policy liberalisation in some regions (e.g., Luxembourg, the Netherlands).

- **Other Illicit Drugs**: Use of non-cannabis illicit drugs is highest in Cyprus (9.9%) and Iceland (7.9%), and lowest in Georgia and Moldova (under 2%). Cyprus stands out for high rates of LSD, cocaine, and MDMA use, likely linked to unique market dynamics and weaker regulatory control. Ukraine also shows an alarming early onset of use, with 4% of youth reporting cocaine use before age 13.

- **Pharmaceuticals and Inhalants**: Lithuania has the highest non-medical use of pharmaceuticals (29%), particularly among girls (36%). Inhalants such as toluene are most prevalent in Sweden (17%) and Liechtenstein (16%), likely due to economic access and regional factors. While Slovakia reports below-average use, trends indicate a rising trajectory.

- **Online Behaviour and Mental Health**: Behavioural addictions are on the rise, with problematic social media use more common among girls (53%), and risky gaming more prevalent among boys (30%). Mental well-being is highest in Nordic countries (e.g., the Faroe Islands, 77%) and lowest in conflict-affected or politically unstable regions (e.g., Ukraine, 43%). Across the EU, girls consistently report lower well-being than boys.

These findings emphasise the heterogeneity of youth risk behaviours across Europe and the influence of health systems, education, legislation, and societal norms. The ESPAD 2024 report provides critical insights for designing targeted, culturally sensitive, and evidence-based prevention and intervention strategies in public health policy at the European Union (EU) level.

5 DISCUSSION

The submitted publication presents a comprehensive secondary analysis of substance use trends among young people in European Union countries, with a particular focus on the specific vulnerabilities of adolescence. The findings demonstrate that psychoactive substance use at a young age is not an isolated phenomenon, but in many regional contexts reaches epidemiological proportions. This highlights the necessity for a coordinated, multidisciplinary approach that encompasses prevention, early intervention, and treatment (Gray & Squeglia, 2017; WHO, 2022).

One of the key findings of this analysis is that cannabis remains the most commonly used illicit substance among young people. Data from Public Health England (2023) confirm this trend, with 87% of adolescents in treatment reporting cannabis as their primary reason for entering the program. Despite its seemingly lower risk profile compared to other illegal drugs, long-term cannabis use during adolescence is associated with neurocognitive impairments, emotional dysregulation, and a significantly increased risk of developing psychotic disorders (Karaaziz & Söyler, 2024; Steinfeld & Torregrossa, 2023). A particularly alarming trend is the rise in new psychoactive substances (NPS), which have shown a sharp increase in many EU countries. According to the Euro-DEN Plus network, in 2023, NPS accounted for 23.3% of all acute intoxication cases in Slovakia—more than three times the rate observed the previous year (EUDA, 2024). These substances are characterised by high toxicity, unpredictable effects, and their frequent evasion of standard toxicological screenings, significantly complicating diagnosis and clinical management.

Another critical aspect identified in this analysis is the phenomenon of polydrug use. The concurrent consumption of multiple substances significantly increases toxicity and the likelihood of life-threatening complications, including cardiorespiratory failure and psychiatric decompensation. According to data from Public Health England (2023), nearly 56% of young clients in treatment reported using a combination of psychoactive substances, typically involving alcohol, cannabis, stimulants, and sedatives. This pattern highlights the need for intervention programs that take into account the complex risk profiles and interactions between various substances. Gender-disaggregated analyses reveal notable differences in vulnerability, behavioural patterns, and psychopathology between girls and boys. Girls not only reported higher levels of psychological distress (65% vs. 39% among boys) but also more frequently disclosed experiences of self-harm and sexual abuse (Public Health England, 2023). These findings emphasise the need for gender-sensitive intervention strategies that address the specific needs and vulnerabilities of each group within adolescent substance use treatment frameworks.

A significant factor influencing substance use among adolescents is mental health. Nearly half (48%) of young clients in treatment reported needing psychiatric or psychological support, aligning with WHO (2022) findings that highlight an alarming decline in adolescent mental well-being across Europe. This trend may reflect not only a real increase in mental health disorders but also a greater willingness among young people to disclose their difficulties and improved access to diagnostics. Age of onset emerges as a critical determinant—79% of adolescents begin using substances before the age of 15. This finding underscores the importance of early preventive interventions targeting younger school-age cohorts. Such programs should be developmentally appropriate, combining education with social skills training and the reinforcement of resilience factors (Stockings et al., 2016).

From an international perspective, countries with progressive harm reduction strategies—such as Switzerland, Germany, and the Netherlands—tend to achieve better outcomes in reducing mortality and supporting the reintegration of young substance users. Interventions such as supervised drug consumption rooms, needle exchange programs, and digital counselling platforms represent practical tools that should be considered for adaptation and implementation in other EU member states (INCB, 2020; EMCDDA, 2023).

An additional key finding is the growing role of schools and social services in referring young individuals to treatment. According to Public Health England (2023), 31% of treatment admissions were initiated through educational institutions, highlighting the need for training and support for school personnel in early detection and intervention efforts.

From a public health perspective, secondary analysis of existing data is highly valuable, as it enables the identification of emerging phenomena, the evaluation of policy effectiveness, and the modelling of future recommendations. Nevertheless, a key challenge remains harmonising methodological approaches to data collection and interpretation across EU member states. Without standardised definitions, indicators, and protocols, cross-country comparability remains limited, ultimately affecting the development of effective policies (OECD, 2019). The identified trends and recommendations offer a strong foundation for updating national drug strategies, supporting evidence-based interventions, and directing resources to the areas of greatest need. Particular emphasis should be placed on strengthening the early detection of risky behaviours, enhancing school-based prevention, investing in adolescent mental health research, and ensuring the availability of community-based psychological services. In doing so, this publication may serve as a vital tool in addressing the growing challenges associated with substance use among young people within a changing European landscape.

In conclusion, despite increasing engagement from governments, professionals, and NGOs in prevention and treatment efforts, substance use among adolescents remains a pressing challenge. It demands rigorous analysis, ongoing monitoring, and, above all, evidence-based, age- and gender-sensitive interventions that respond to the evolving dynamics of the drug scene and broader socio-cultural contexts.

6 CONCLUSIONS

Based on the conducted secondary analysis, substance use among young people in European Union countries constitutes a significant public health challenge with far-reaching neurobiological, psychosocial, and societal consequences. The findings confirm that adolescence is a developmental stage of heightened vulnerability to the onset of addictive behaviours. Key risk determinants include developmental characteristics, substance availability, digital exposure, and mental health status. Particularly concerning is the rising proportion of adolescents, especially girls, experiencing mental health difficulties, with prevalence rates reaching 65%, underscoring the strong association between psychological distress and substance use (Public Health England, 2023; WHO, 2022). The data reveal that the age of initiation remains critically low, often occurring before the age of 15. This finding highlights the urgent need for early prevention strategies, particularly within educational settings. Schools have emerged as the most frequent referral source for treatment entry, emphasising their pivotal role in early identification and intervention (Public Health England, 2023). At the European level, the analysis indicates that cross-national differences in prevalence, age of onset, and substance type reflect not only cultural variations but also the disparate effectiveness of national prevention policies and legislative frameworks. Countries such as Iceland and Malta have successfully reduced tobacco and alcohol use through legislative restrictions, evidence-based school programmes, and mental health promotion (ESPAD, 2024). In contrast, several Central and Eastern European countries (e.g., Slovakia, Estonia, Lithuania) face increasing burdens due to early onset and higher rates of intoxication.

The report also emphasises the importance of intersectoral collaboration among healthcare, education, social services, and community organisations. Data sharing, joint development of indicators, and integrated therapeutic approaches are critical for effective prevention and treatment. However, the limitations of this analysis must be acknowledged. The secondary nature of data, variable statistical quality across countries, and limited access to longitudinal information constrain the generalizability of results. Future research should prioritise longitudinal tracking, qualitative inquiry, and harmonised monitoring systems across EU Member States.

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In conclusion, addressing substance use among youth demands a comprehensive, multidisciplinary, and evidence-based approach with long-term sustainability. Only through such a strategy can we adequately respond to the evolving drug-related social landscape, reduce the health burden, and support the healthy development of young people across the European Union.

Future research should also address currently underexplored areas, including the behavioural effects of cannabis policy reform on adolescents, the efficacy of gender-sensitive prevention strategies, the link between digital addiction and substance use, and the role of socioeconomic inequalities in shaping risk behaviours. Rigorous exploration of these domains will provide a stronger empirical foundation for targeted and effective public policy responses.

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