



Socioeconomic and psychosocial determinants of substance misuse – a national perspective

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Abstract

Accurate estimates of population drug use and an understanding of the factors that influence substance choice are essential for the development of appropriate and targeted prevention strategies and campaigns. This review aims to provide an overview of the socioeconomic and psychosocial factors that influence substance use patterns within the Australian population through exploration of current and historical examples of substance misuse. Australia's comparatively large online drug market is reflective of the country's relative geographic isolation and high local drug prices. Legislation, particularly relating to cannabis cultivation and personal use, has evolved significantly in response to increased scientific and commercial applications and changing attitudes towards medical and personal use. Methylamphetamine use is disproportionately high, attributed to Australia's geographic location, high rates of local manufacture, steady cost, and increased purity. Despite the increased cost of cocaine over time, the profile of users appears to dictate rates of use. The prevalence of injecting drug use is driven by a lack of education, perceived risk, stigma, and other social factors. Additionally, psychosocial factors also contribute to substance misuse among specific population subgroups such as petrol sniffing among Indigenous Australians. Understanding the reasons for geographical variability in illicit drug use assists in the interpretation of substance-associated behavior in specific groups/populations and in guiding future intervention efforts and predictions of emerging trends. In addition, an understanding of factors influencing local drug usage may assist forensic practitioners in evaluating the occurrence and effects of particular substances that may emerge as significant factors in drug-related deaths.

Keywords Illicit · Drug · Trends · Forensic pathology · Forensic science · Toxicology

Introduction

Globally, drug misuse is a major contributor to disease, illness, injury, and death. In 2017, drug misuse was responsible for the loss of approximately 42 million years of “healthy” life and 585,000 deaths [1], with over 35 million people diagnosed with a drug use disorder in 2018 [1–3]. An illicit drug is defined as a substance for which possession, use, production, importation, and distribution is prohibited by law [4]. Illicit drug use contributes significantly to total drug use, including both the illegal use of prescription medications and that of

prohibited substances [3]. Over the last 10 years, illicit drug use has increased by 28% globally, with approximately 269 million past-year drug users in 2018 [2, 3].

In 2018, illicit drug use also contributed to a significant proportion of the total burden of disease and deaths in Australia (3% and 1.8%, respectively), driven by trends primarily among young people, and the use of opioids [5]. In terms of drug use trends among the Australian population, the 2019 National Drug Strategy Household Survey (NDSHS) found that cocaine use was at its highest level in the last 20 years but rates of substance use in general were decreasing among younger generations [6]. It also appears that attitudes towards drug use are changing, with more Australians supportive of cannabis use and pill-testing than in previous reporting periods [6]. Changes to drug scheduling (e.g., codeine being made a prescription-only medication in 2018) also contributed to a decrease in extra-medical use of pharmaceutical substances, particularly pain killers and opioids [6]. The term “drug” implies use of a pharmaceutical

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substance in the context of medical or extra-medical use. However, there is a much more diverse range of substances, both pharmaceutical and non-pharmaceutical, that may be abused within given populations and not captured by the primary literature. These will be explored in further detail with illustrative examples.

While there is extensive research on substance use and health-related outcomes in particular populations, analysis of socioeconomic and psychosocial factors that influence drug choice and impact upon drug prevalence within specific communities is comparatively limited. Significant factors which influence substance choice include availability, geographic affluence, substance policies, law enforcement activity, targeting, product formulations and quality, cost, demographics, drug-related stigma, perceived risk of harm, and traditional use [7–10]. There are many examples of idiosyncratic substance use in countries and demographic groups which can be attributed to the intersectional relationship between and among many of these factors [7, 11–13]. An understanding of these complex and inter-related issues is essential for the development of targeted prevention strategies and may assist in predicting trends in future substance use with reduced associated morbidity and mortality. This review provides an overview of these factors in the context of the Australian population and explore current and historical examples of substance misuse that are particularly prevalent within specific demographic groups or geographic areas. A literature search was undertaken for reports of substance misuse both from the internet in general and from specific search engines such as PubMed and Google Scholar. In addition, relevant media articles and national reports from various health and government bodies were also evaluated.

Availability

As the availability of drugs fluctuates, trends in drug use vary accordingly. In this context, an economic theory known as the “substitution effect” explains how drug preference is primarily driven by availability, alterations in price and/or an individual’s income [7]. For example, someone whose main drug of preference is heroin may substitute this for morphine if it is deemed to be more widely available or cheaper by comparison. This scenario may also occur in the opposite direction with changes to local drug prices and drug availability, particularly as ‘doctor shopping’ (i.e. obtaining several prescriptions by visiting multiple doctors’ practices) has become a more widely recognized problem [14]. Availability of drugs may be influenced by several other factors including means of access, social dynamics, geography, legislation, and large-scale supply interventions [8, 15, 16].

Relative geographic isolation, both national and regional, may also influence the ability to obtain certain drugs, as is

demonstrated by significant regional and sub-regional differences in drug use prevalence for specific substances. For example, in the Oceanic region, the number of past-year cannabis, cocaine, amphetamine, and ecstasy users are amongst the highest in the world, while the number of opioid users is comparatively low [17].

Before the advent of the internet, buying and selling illicit drugs was a more intensive undertaking often associated with significant personal risk. However, the “dark net,” among other online platforms, has revolutionized the modern drug market increasing the availability and access to drugs by overcoming the limitation of geographic isolation [18] and reducing the perceived risk of detection [19]. The dark net is a network within the internet that is only accessible with specific software or authorization and may be used for both illegal (e.g., illicit drug purchasing) and legal activities [20]. One of the first “dark net” drug markets (crypto markets) was created in 2006 and was live up until 2012, when it was closed after a two-year investigation by the Federal Drugs Administration (FDA). The website served as a marketplace for a variety of illicit substances for thousands of users in 34 different countries [21]. However, although it would seem more convenient, it appears that only a small proportion of younger drug users actually choose to purchase their drugs through the “dark net” [10], with most preferring to obtain drugs from friends [19].

Online drug purchasing in Australia

In Australia, online drug markets have rapidly grown in popularity, as new iterations of previous websites emerge. In the most recent 12-month reporting period, there was a considerably rapid turnover of crypto market platforms [22]. The comparatively high number of online drug dealers in Australia compared to other countries is thought to reflect the country’s relative geographic isolation and high local drug prices [23]. While the online Australian drug market is largely comprised of Australian sellers and Australian buyers which is largely attributed to the reduced risk of border seizures (and legal penalties) in addition to better-quality products [23], individuals may also buy drugs online from overseas. Importation methods can include international mail, sea or air cargo, and air passengers or crew [24].

Between October 2021 and September 2022, the most common substances on all crypto market listings were cannabis (30%), followed by cocaine (7.6%), benzodiazepines (7.5%), MDMA (7.5%), meth/amphetamines (6.1%), and opioids (6.1%) [22]. However, opioids showed the highest rate of growth concomitant to a decrease in LSD listings in comparison to other substances [22].

Use of online resources often depends on social network dynamics and the drug use habits of acquaintances, friends, and family. However, the digital age has also introduced

other newer, more popular platforms in high socioeconomic countries (including Australia), which are used to facilitate the purchase of drugs; these have included Snapchat, Instagram, and WhatsApp [19, 25]. These platforms provide quick, easy, and convenient means of facilitating buyer–seller interactions and as they are perceived to be more secure than traditional methods, they are rapidly growing in popularity [19, 25].

Legislation

Legislation (i.e., regulation and prohibition) is one of the main strategies employed to reduce drug use in many countries [8]. At a global level, drug legislation has needed to evolve to target not only traditional plant-based drugs (e.g., heroin, cocaine, and cannabis), but also the emergence of new psychoactive substances (NPS) and the illicit use of pharmaceutical drugs such as opioids [26]. One of the current difficulties in regulating illicit drugs, particularly NPS, is in keeping drug policy abreast of rapidly changing drug use patterns.

Over the last 20 years, integration of national drug policies underpinned by harm reduction strategies has become increasingly popular, supporting larger-scale interventions to reduce supply and demand [16]. However, legislation varies widely between and within countries. For example, Australia's drug policies historically have been considered relatively strict, often applying penalties for personal use of illicit drugs [27]. Responses from the 2014 Global Drug Survey indicate that residents from countries with prohibition-based drug policies such as Australia, would feel more confident in utilizing harm-minimization programs if drug policies were to be liberalized, due to reduced fear of criminal charges [27]; i.e., some Australian residents support interventions underpinned by education and treatment, rather than enhanced law enforcement strategies [28]. There is also growing evidence to support decriminalization of drug use such as low rates of drug use in European countries where this has occurred for personal drug use [29].

There is disagreement concerning the measurable impact of drug policy and legislation on the prevalence of drug use, as quite similar drug trends have been observed between countries with markedly different drug policies and vice versa. For example, the United States (US), United Kingdom (UK), Netherlands, Switzerland, and Australia all have very different drug policies but present similar trends in certain, but not all, drug categories [16].

While the issue of drug policy is multifaceted, it is evident that policy reform has the capacity to influence drug use patterns, and subsequently reduce morbidity and mortality. Conversely, it has been argued that changes in drug policy may not directly correlate to reduced drug use or positive outcomes for drug users. Thus, it remains unclear to

what extent legal penalties influence an individual's choice to purchase and use drugs.

Cannabis legislation

In 2020, cannabis use among adults in Australia and New Zealand was found to be significantly higher than the global average [30]. The popularity of cannabis use in Australia may be attributed to stability in the cost, purity, and accessibility of cannabis compared to other illicit drugs. Legislative reform relating to industrial and commercial hemp cultivation in several Australian states in the early 2000's could be considered the catalyst to a change in attitudes towards the legalization of cannabis for medical and personal use. While drug policies related to personal cannabis use in Australia have historically followed a strict, no-tolerance approach, recent developments have seen the legalization of commercial cannabis growing for medical and scientific purposes. Furthermore, states and territories including the Australian Capital Territory have also legalized small amounts of cannabis for personal use without penalty, in line with changing national attitudes. The 2019 NDSHS found that 41% of Australian's surveyed support the legalization of cannabis for personal use, which has nearly doubled since 2016 [6].

More recent studies using survey data indicate, however, that the legalization of cannabis has been associated with increased prevalence of use and substance use disorders, allowing for the lag time between the passage of laws and the development of trends [31–34]. Furthermore, these studies have highlighted that increased cannabis use has occurred not only among frequent users, but also among previously non-using adolescents and young adults [6, 31, 32]. Another important issue following increased availability due to legalization has been a decrease in the perceived risk of harm [34–37].

Product formulations and quality

Evolution and optimization of drug manufacturing processes has resulted in a rapid increase in the number and variety of drugs available on the market, particularly involving NPS. Population drug use trends often reflect a desire to obtain these newer, more popular drugs as higher quality formulations of traditional drugs enter the market. For example, ecstasy was a popular recreational drug in the US in the late 1970's until it was listed as a Schedule I drug in 1985 in response to increasing concerns about abuse potential [38, 39]. Australia also criminalized the possession and use of ecstasy [40]. However, ecstasy use has recently re-emerged, partly in response to increased availability of higher quality products with newly available formulations (powder and crystal) [2]. A study of illicit drug substitution among high-risk drug users found a preference for substituting

traditional drugs with either newer drugs, including NPS [41]. The most common substitutions were those within the same drug class, where the substituted drug elicits similar physiological effects (e.g., heroin for methadone, cannabis for synthetic cannabinoid receptor agonists (SCRA's)) [41]. SCRA's are potent synthetic compounds that bind with the same receptors as endogenous cannabinoids (CB₁ and CB₂) [42]. However, synthetic cannabinoids are complex structures, allowing for a potentially endless number of chemical modifications to create new products with unknown potency and physiological effects [42]. These substitutions may also involve more complex factors than the desire for new product formulations with improved quality, but also relationships between availability, cost, drug policy and desired effects. Enhanced domestic drug manufacturing processes have also increased the local availability of specific drugs such as cannabis and methamphetamine.

Domestic manufacture of methylamphetamine

In 1998, an increase in the number of fatalities associated with amphetamine derivatives was identified in Adelaide, South Australia [43] and 20 years later, Adelaide was named the “methamphetamine capital of the world” based on a seven-year wastewater study [44, 45]. The wastewater study involved daily sampling of wastewater over a period of one week between 2011 and 2017 and analysis for the presence of popular drugs of abuse (e.g., cocaine, methamphetamine, and MDMA) by liquid chromatography-tandem mass spectrometry [44]. Although use by people aged 40 years and over appears to be increasing [46], meth/amphetamine consumption among younger age groups (20–29 years) is declining [6]. It is unclear whether increasing use among adults over the age of 40 is due to the aging of long-term methylamphetamine users or an increasing appreciation by younger people of the risks associated with the drug. Other factors that may have contributed to reduced rates of use among young people include availability or popularity of other drugs and their associated effects, changes to social landscapes, and group dynamics.

The Australian market for methylamphetamine is relatively stable according to the 2017–2018 Illicit Drug Data Report, where amphetamine-type substances (ATS) constituted nearly 40% of national illicit drug seizures, only surpassed by cannabis [47]. However, since 2014–2015 when ATS border detections were the highest on record, the number of methylamphetamine detections have consistently decreased [48]. The reduction in numbers of detections may be partially due to the significant increase in domestic production of methylamphetamine. Compared to other countries, Australia has a comparatively high number of clandestine laboratories and thus, a large domestic market for methylamphetamine [23]. The majority of clandestine laboratories detected in Australia in

2017–2018 were producing methylamphetamine, most of which were residential facilities operated by users/addicts [47]. In terms of geographic variability, both recent and lifetime methamphetamine use has been found to be higher in rural areas compared to urban regions [49]. This may support the hypothesis that drug use is being driven by the presence of methylamphetamine manufacturing sites in rural areas and/or urban populations demonstrating a preference for alternative drugs.

Although there are various forms of ATS available on the market, crystal methamphetamine (crystal/ice) remains the most popular [6]. This is confirmed by survey data from a sample of people who inject drugs in several Australian states between 2000 and 2022 who report that crystal methamphetamine use has steadily increased to comprise approximately 80% of responses, while base and powder forms have decreased to comprise less than 10% of responses, respectively [50]. The “advantages” to using crystal methamphetamine over other forms include a generally higher purity and more intense “high” [6]. Over the last decade, the price of “street” methylamphetamine in Australia has stayed relatively stable, while drug purity has increased significantly [47] (Fig. 1). The appeal of methylamphetamine and ATS in Australia appears to involve a relationship between geographic location, availability through local manufacturing, and a steady cost despite increased product quality.

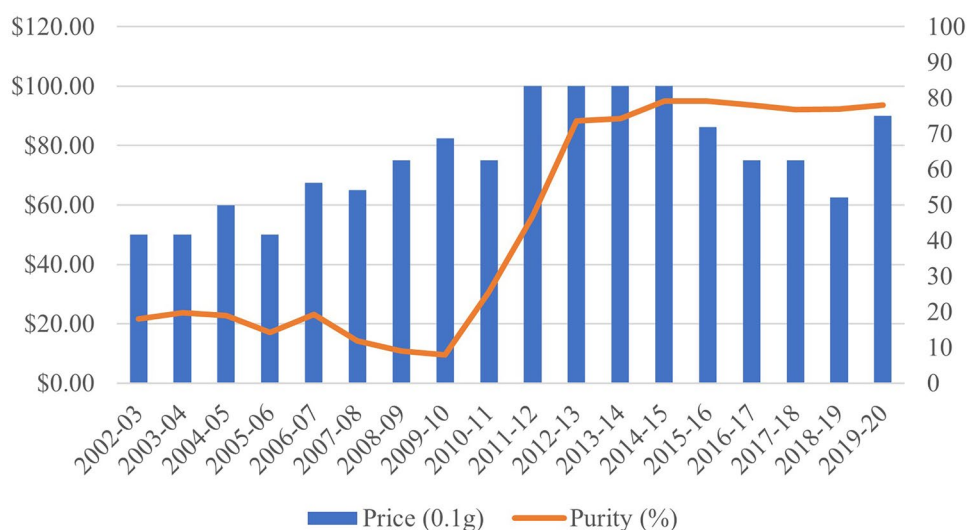
Cost

Cost is a significant factor influencing drug prevalence and preference [7]. In a cohort of “dark net” purchasers, 38% of users cited cheaper online prices as the major motivating factor for purchasing drugs compared to buying on the street [51]. Cost has also been cited as a significant factor driving growth within the illicit fentanyl market, as it is cheaper to produce than heroin [52]. However, this is highly variable between socioeconomic and geographic areas. In two cities in Tajikistan, heroin was cheaper than a bottle of vodka and so it subsequently became a popular drug of choice among people who injected drugs (PWID) [12]. High drug costs can also promote risky behaviors to obtain drugs or the necessary purchasing funds. For example, a Canadian cohort of female sex workers had a preference for heroin, despite it costing twice as much as cocaine, and were prepared to actively participate in high-risk activities to support their drug preference [53].

Changes in drug prices over time

According to data from the Australian Criminal Intelligence Commission (ACIC), all drugs analyzed have increased in

Fig. 1 Median methylamphetamine price and purity in Australia between 2002–2003 and 2019–2020 (adapted from [4, 47, 48, 54, 55, 87–99])



price, except for MDMA (Table 1). As discussed above, the price of methylamphetamine has increased in parallel with a significant increase in purity (Fig. 1). The higher price of methylamphetamine may also be contributing to decreasing use among younger people, where rates of use among those over 30 years of age has more or less plateaued [6]. Significant increases in the price of cocaine and heroin were also seen over the four reporting periods. Despite the large increase in price for cocaine, the frequency of use and socioeconomic profile of cocaine users may account for unchanged rates of use (i.e., infrequent use among individuals with a stable income). While heroin has a price comparable to methylamphetamine, rates of use among the Australian population are significantly lower [6]. As discussed, there may be significant stigma attached to injecting drugs, which may discourage uptake in a new, younger cohort of users, in addition to the high monetary cost. The price of hydroponic cannabis (i.e., cannabis grown without soil) stayed relatively consistent over the last 15 years which may partly account for the increased use of cannabis among both regular and first-time users, as well as its wide accessibility [6]. Interestingly, the purity of phenethylamines (mostly MDMA) has markedly increased, yet the price dropped significantly across the four reporting periods. Both recent and lifetime use of MDMA has increased in Australia since 2016 [6].

Demographics and geographic affluence

Age, sex, and the lifestyle associated with particular demographic groups may influence which drugs are favored. There are also certain age groups that demonstrate higher overall levels of drug taking, in particular youth and adolescents [9], with studies of high school and university students showing higher drug use rates compared to the general population. Potential factors that increase the risk of drug use in adolescents and university students include changes in lifestyle, reduced parental support/influence, and increased stress [56, 57].

Wastewater studies have provided evidence of significant regional differences in drug use; for example, cocaine and methylenedioxymethamphetamine (MDMA) use in Australia is approximately twice as high in urban areas, whereas methamphetamine use is higher in rural areas [49, 58]. Overall, however, drug use is generally higher in urban areas compared to rural areas; a trend observed in many countries [26, 58, 59]. This can be largely attributed to the relationship between urbanization and geographic affluence. An additional consideration may be increased accessibility to drugs in urban areas compared to more remote regions which may also have restricted access through online purchasing (i.e., from poor internet connection and limited postal options).

Table 1 Median prices of methylamphetamine, MDMA, cannabis, cocaine and heroin in Australia between 2005–2006 and 2019–2020 (adapted from [24, 48, 54, 55])

	2005–2006	2010–2011	2014–2015	2019–2020	2005–2006 vs. 2019–2020
Methylamphetamine (0.1 g)	\$50.00	\$75.00	\$100.00	\$90.00	↑ 80%
MDMA (1 tablet)	\$37.50	\$33.25	\$35.00	\$22.50	↓ 40%
Cannabis (1 g)	\$25.00	\$25.00	\$23.75	\$27.50	↑ 10%
Cocaine (a cap, 0.2 g)	\$47.50	\$50.00	\$65.00	\$80.00	↑ 68.4%
Heroin (a taste/cap, 0.1–0.3 g)	\$52.50	\$50.00	\$75.00	\$85.00	↑ 61.9%

Use of cocaine

Studies suggest that cocaine users demonstrate a consistent and specific socioeconomic, educational, and employment profile. The dominant group of cocaine users in Australia appear to be employed, well-educated individuals from high socioeconomic areas with the financial resources to support cocaine use [6, 60]. Between 2001 and 2019, the median age of cocaine users increased from 25 to 28 years of age, suggesting that this was due to the aging of a group of users rather than increased uptake among older persons [6]. Compared to other illicit drugs such as cannabis and meth/amphetamines, cocaine use is less frequent [6]. This may be attributed to the high cost of cocaine (\$80 per 0.2 g in 2019–2020) compared to other substances [24]. However, in 2019, cocaine use was found to be at its highest level in the last 18 years among adults [6].

Stigma and perceived risk

According to a recent survey, the two most significant factors which discourage drug use among young people are the perceived risk of harm and personal disapproval [10]. A cohort of Canadian at-risk youth who recounted their introduction to drug use highlighted a sense of curiosity leading to “nonchalant” choices which seemed inconsequential at the time, only to be made aware of the risks and consequences later in life [13]. While there is a high prevalence of cocaine and ecstasy use in many European countries, the majority of young people consider regular use of these substances to pose a “high” health risk [10]. More than 80% of individuals aged 12 years and older perceived a great risk associated with the weekly use of cocaine, heroin, or LSD (lysergic acid diethylamide) [61]. However, although a majority of young people are aware of the risks associated with illicit drug use, this does not prevent use. For first-time or naïve drug users, initiation or continuation of drug use may be contributed to by limited awareness or a lack of education relating to the risks associated with drug use. Alternatively, perceived risk of harm may not be impactful enough to combat peer pressure within social groups. Conversely, addiction disorders are the most commonly encountered explanation for continuation of drug use among regular drug users despite recognition of the risks, particularly in the setting of injecting drug use.

There are also distinct differences in perceived harm between non-users and users. Compared to users, individuals who do not engage in the non-medical use of prescription stimulants (NMUPS) perceived them to be less safe and more harmful; they would expect guilt, dependence, and anxiety and would be less likely to divert their medication if it were prescribed to them [62]. In general, it appears that those who do not use drugs perceive a higher risk of harm compared to those who do [61, 63].

The main obstacle in disseminating drug-related health information to the general public, particularly youth, is in finding an engaging and influential platform and in determining whether users know and/or care that there is risk involved in such practices. For those aged from 18 to 24 years, the most influential sources of information on drugs are “mine and my friends’ own experiences” and popular culture (books, television, films, famous individual’s activities), but for those aged over 45 years, media reports, expert opinions and drug classifications are more important [64]. For those who already use drugs, the opportunity to discourage drug use may be limited if risk perception is already lowered by familiarity with a particular drug(s) [63]. This may be further compounded by additional factors such as peer pressure, normalization, situational stress, and physical addiction.

Risk perception and stigma among people who inject heroin

Between 2000 and 2022, heroin and methamphetamine remained the two most prevalent drugs among a sample of people who inject drugs (PWID) from all Australian states and territories [50]. Over this period, rates of heroin use have remained stable, while methamphetamine use has consistently increased in popularity to overtake heroin within the last 2 years [50]. Heroin use is highly stigmatized and widely perceived as a drug associated with significant health and social risks, by users and non-users alike [61, 64–66]. Unfortunately, a large proportion of people who inject drugs (PWID) also experience significant stigma when engaging with healthcare providers [67]. Not only does this behavior discourage PWID from engaging with healthcare services while perpetuating negative attitudes within society, but also has detrimental economic implications for healthcare expenditure. For example, more than 5.5 million PWID are living with Hepatitis C which has accounted for almost half of the number of deaths associated with liver disease [2]. Reluctance to engage with health care services also contributes significantly to a lack of knowledge of blood-borne diseases among PWID. Inadequate knowledge of the health risks may also contribute to the initiation of drug injection [68]. Several studies have highlighted inadequate knowledge about sterilization practices required to prevent the transmission of blood-borne diseases among PWID [69, 70]. In a cohort of homeless individuals injecting drugs, limited awareness of the health risks was evident, as well as steps taken to mitigate risk given their limited circumstances [69]. It has also been shown that a small proportion of heroin users may combine heroin with other drugs which may also increase risks [68].

Awareness of the health risks and physiological effects associated with injecting drug use may prevent transitioning from smoking to injecting. A significant proportion of people who

smoke heroin expressed a dislike for the intense physiological effects of injecting compared to smoking [66]. Alternatively, risk awareness may motivate some injecting heroin users to substitute heroin with a different drug [66]. Injecting heroin users cited awareness of health risks as a motivating factor to substitute heroin with cocaine, illicit methadone or other prescription opioids [71]. However, the latter substitution is particularly problematic as heroin users may overdose on these [72, 73].

There are also perceived risks related to factors external to injecting drug use, such as the risk of being arrested for possession, lack of affordability, and social isolation [68]. Interestingly, the social factors cited by heroin users that seem to be more influential in discouraging injection are negative observations made of friends, family, and/or partners [66]. Among a cohort of people who smoked heroin, with some occasionally injecting, significant concerns were highlighted as to the social implications of injecting versus smoking as injecting was deemed to pose risks of unemployment, relationship problems, and social isolation [66].

Conversely, social networks may also contribute to the initiation of heroin use with more than 70% of injecting drug users in Vietnam citing friends as the reason for first using heroin with a small proportion citing partners; most started by smoking heroin with very few starting with injecting [70]. Prolonged exposure to drug use has been highlighted as a potential risk factor in the escalation of drug use practices, from smoking to injecting heroin for example [70]. However, in a cohort of police detainees, the length and frequency of heroin use was associated with lowered risk perception, despite 30–35% of participants rating their local heroin market as very risky [74]. It has also been shown that PWID may also engage in other high-risk behaviors, either before or subsequent to initiating injecting drug use, with sex work being the main source of income for a significant proportion of PWID in Vietnam [70].

Culture and tradition

Some drugs have persisted for thousands of years and continue to be used among communities and cultural groups as traditional herbs and remedies. For example, substances such as kratom, khat, kava, coca, ayahuasca, kambo, and peyote (mescaline) have been part of traditional cultural and religious practices for centuries in various parts of the world [75–77], but modern use in Western society is becoming increasingly popular. In Iran, there is a long history of opium use with a supportive culture that persists even today [11]. However, there are also examples of psychoactive plant-derived substances that have their origins in traditional use among local populations, where they have now been banned and diverted to the illicit trade within Western society. Contrastingly, peyote (mescaline) is classified as a Schedule I

controlled substance in the US, with associated legal penalties for possession and sale [77]. However, members of the Native Americans Church are excepted because they ingest peyote legally during religious ceremony [77]. The cultural and traditional importance of these substances among some population groups introduces significant complexities in consideration and implementation of legal regulations relating to possession and use.

Petrol/gasoline sniffing in indigenous communities

Volatile substance sniffing is a form of recreational drug use which involves the inhalation of certain chemical substances [78]. Petrol sniffing, an example of volatile substance misuse, is a persistent problem particularly among Indigenous communities in Australia [79]. The first accounts of petrol sniffing in Australia were from a Northern Territory in the 1940's [80]. The appeal of petrol sniffing may lie in the rapid action of inhalants, the low cost, and the lack of access to other drugs [81]. Other reasons provided by individuals from an Aboriginal community cite rebellion, lack of parental control, and peer pressure [80]. Petrol sniffing among these communities has commenced at increasingly younger ages and appeared to be driven by psycho-social factors related to changes in social dynamics and even seasonal changes [82]. The most well-documented and successful intervention has been the introduction of low aromatic fuel which, while still harmful, does not produce the desired psychoactive effects due to reduced amounts of intoxicating solvents [79, 83]. The reasons why volatile substance misuse seems to be particularly prevalent among isolated indigenous communities, not only in Australia but in several other countries [84–86], is not yet completely understood.

Conclusion

Accurate estimates of population drug use and an understanding of the factors that influence drug choice may assist in the development of appropriate and targeted prevention strategies. This review has highlighted several psychosocial and socioeconomic factors that influence drug use patterns for consideration in the development of future drug use interventions.

The last few decades have seen a shift in the profile of drug use in Australia, including the “phasing out” of traditional drugs in preference for newer, more popular alternatives. The phenomenon of the “substitution effect” has been observed in many contexts and should be considered in the development of legislation, particularly as governments transition to interventions governed by harm-minimization rather than legal penalties. Given the increasing popularity

and availability of NPS, there is much uncertainty about how drug use patterns will evolve over the coming decades. Consideration of psychosocial factors (e.g. risk awareness and stigma) will also be important in developing approaches for harm minimization and subsequently, reducing associated morbidity and mortality. A knowledge of past, current, and emerging local drug use trends may assist health care professionals and public health agencies in understanding and evaluating the outcomes associated with newly emerging substances of abuse within populations.

Key points

This paper:

- Provides a narrative review of socioeconomic and psychosocial determinants of substance misuse.
- Explores current and historical examples of substance misuse in Australia.
- Highlights the importance of understanding past and current trends in evaluating emerging substances of abuse.

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Declarations

Competing interests The authors declare no competing interests.

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