Substance use, socio-demographic characteristics, and self-rated health of people seeking alcohol and other drug treatment in New South Wales: baseline findings from a cohort study

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The known: More than 50 000 treatment episodes for people with substance use problems were completed in NSW during 2020–21, but information on the people treated is limited.

The new: Our analysis of routinely collected data found that the socio-demographic and self-rated health profiles of people seeking treatment at publicly funded substance use treatment services for the first time differ according to their principal drug of concern.

The implications: Comprehensively assessing the circumstances of people with substance use problems, including polysubstance use, health and wellbeing, and housing stress, could facilitate individualisation of the care provided by alcohol and other drug treatment services.

Abstract

Objective: To investigate the demographic characteristics, substance use, and self-rated health of people entering treatment in New South Wales public health services for alcohol, amphetamine-type stimulants, cannabis, cocaine, or opioids use, by principal drug of concern.

Design: Baseline findings of a cohort study; analysis of data in patient electronic medical records and NSW minimum data set for drug and alcohol treatment services.

Setting, participants: People completing initial Australian Treatment Outcomes Profile (ATOP) assessments on entry to publicly funded alcohol and other drug treatment services in six NSW local health districts/networks, 1 July 2016 – 30 June 2019.

Main outcome measures: Socio-demographic characteristics, and substance use and self-rated health (psychological, physical, quality of life) during preceding 28 days, by principal drug of concern.

Results: Of 14 087 people included in our analysis, the principal drug of concern was alcohol for 6051 people (43%), opioids for 3158 (22%), amphetamine-type stimulants for 2534 (18%), cannabis for 2098 (15%), and cocaine for 246 (2%). Most people commencing treatment were male (9373, 66.5%), aged 20–39 years (7846, 50.4%), and were born in Australia (10 934, 86.7%). Polysubstance use was frequently reported, particularly by people for whom opioids or amphetamine-type stimulants were the principal drugs of concern. Large proportions used tobacco daily (53–82%, by principal drug of concern group) and reported poor psychological health (47–59%), poor physical health (32–44%), or poor quality of life (43–52%).

Conclusions: The prevalence of social disadvantage and poor health is high among people seeking assistance with alcohol, amphetamine-type stimulants, cannabis, cocaine, or opioids use problems. Given the differences in these characteristics by principal drug of concern, health services should collect comprehensive patient information during assessment to facilitate more holistic, tailored, and person-centred care.

Almost 7% of the disease burden in Australia is attributable to alcohol and other drug use.[1] Worldwide, alcohol is the seventh leading risk factor for premature death.[2] Substance use resulted in 18 million years of healthy life lost in 2019,[3] with negative health, social and economic outcomes for individuals, families, and communities.[4] Almost one million Australians (4.3% of the population) met International Classification of Diseases criteria for an active substance use disorder in 2019,[5] including users of alcohol (494 000),[6] cannabis (170 000), amphetamine/methamphetamine (135 000), opioids (114 000), and cocaine (60 000).[7]

According to data collected for the Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS NMDS),[8] publicly funded services provided about 225 000 treatment episodes in Australia during 2020–21 (62% of all episodes; ie, excluding episodes in private and primary care), including 50 917 in NSW (23%).[9] The principal drugs of concern were alcohol (36%), amphetamine-type stimulants (23%), cannabis (22%), opioids (including heroin; 7%), and cocaine (1.4%). These proportions were similar in New South Wales (38%, 22%, 18%, 9%, 3% respectively).[9]

The AODTS NMDS is an invaluable resource, but provides an incomplete picture of people receiving treatment for alcohol and other drug use. Its data do not cover ongoing (open) treatment episodes, and information on demographic characteristics, recent substance use, general health, and social conditions is limited. Other data sources, including clinical trials and cohort studies, can provide more detailed information, but the generalisability of study findings is limited by the size and quality of their samples.

Since June 2016, the Australian Treatment Outcomes Profile (ATOP) has been an integrated component of the electronic medical records of government drug and alcohol services in NSW, which provide 62% of treatment episodes in NSW. The ATOP provides data that complement those of the

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AODTS NMDS and non-government organisations.[8,10-12] We undertook exploratory analyses of ATOP data to investigate the demographic characteristics, substance use, and self-rated health of people entering treatment for alcohol and other drug use in NSW public health services, by principal drug of concern.

Methods

We analysed electronic patient medical records data for people who attended public health alcohol and other drug treatment services in six NSW local health districts or networks (South Eastern Sydney, Hunter New England, Central Coast, Illawarra Shoalhaven, and North Sydney local health districts; St Vincent's Health Network) during 1 July 2016 – 31 June 2019. The lower age limit for access to these services was generally 16 years. The six participating health districts provide services to about 3.1 million people aged 15 years or more (44% of the NSW population).[13]

Data sources

We extracted data on patient and treatment characteristics and services provided in publicly funded alcohol and other drug treatment services from the NSW minimum data set for drug and alcohol treatment services (NSW MDS DATS).[14] We extracted age, sex, country of birth, preferred language, principal drug of concern, and Indigenous status for both closed (completed) and open (ongoing) treatment episodes that commenced during the study period.

Site data managers extracted ATOP data for all people who completed the ATOP on treatment entry (community-based counselling, case management and support, opioid pharmacotherapy, relapse prevention medications, ambulatory withdrawal, some inpatient hospital withdrawal services). The ATOP, a validated, patient questionnaire routinely completed at NSW government and many non-government services during assessment for alcohol and other drug treatment entry, assesses the following characteristics for the 28 days preceding presentation:[15]

- Social conditions:
  - number of days on which the person worked or studied;
  - housing stress: primary and secondary homelessness (living in public places, temporary shelters [eg, bus shelters, tents], rough sleeping, "couch surfing"), or risk of eviction (ie, loss of tenure for usual accommodation);
  - whether the person is living with children;
  - experience of arrest;
  - experience of violence (as victim or perpetrator).
- Substance use:
  - number of days on which alcohol, cannabis, heroin, other opioids (excluding prescribed opioid agonist treatment), benzodiazepines, amphetamine-type stimulants, or cocaine were used;
  - daily tobacco use;
  - number of days on which injected drugs were used;
  - whether the person shared injecting equipment.
- Self-rated health:
  - physical health, psychological health, and quality of life, on subjective scales of 0 (poor) to 10 (good).

Outcomes

The independent variable in our analysis was principal drug of concern (alcohol, amphetamine-type stimulants, cannabis, opioids, or cocaine; benzodiazepines were originally included but excluded *post hoc* because of the small number of people [210] in this group). We assessed age, work or study frequency (days), substance use frequency (days, by substance: alcohol, amphetamine-type stimulants, benzodiazepines, cannabis, cocaine, any opioids [heroin or other non-prescribed opioids]), and self-rated psychological health, physical health, and quality of life as continuous variables; and sex, Indigenous status, birthplace (Australia, elsewhere), and preferred language (English, other) as binary variables. Housing stress, any violence (as victim or perpetrator), living with a child under five years of age, arrest, any use of alcohol, amphetamine-type stimulants, benzodiazepines, cannabis, opioids, or cocaine, any injecting drug use, daily tobacco use, and poor psychological health, physical health and quality of life status (scores of 5 or less[16]) during the past 28 days were also assessed as binary variables.

Data analysis

Exploratory Bayesian analyses were conducted in JASP 0.16.4 (University of Amsterdam; jasp-stats.org). For continuous variables (age, work/study frequency, substance use frequency) we used Bayesian analyses of variance (ANOVAs) and report Bayes factors for *post hoc* pairwise comparisons of differences between principal drug of concern groups. Bayes factors >1 were deemed to be evidence for a between-group difference, >3 to be substantial evidence for a difference; conversely, Bayes factors <1 were deemed to provide evidence favouring the null hypothesis, <0.33 substantial evidence for the null hypothesis.[17] We conducted classical ANOVAs to estimate effect sizes (Cohen's d). As ANOVA priors we used default broad values, weakly regularising the Jeffrey's priors supplied by JASP.

For binary dependent variables we used Bayesian 2×2 contingency tables, with principal drugs of concern recoded as binary variables. A Poisson sampling plan was applied because we analysed available data rather than a sample of planned size. We report Bayes factors and Cohen's w effect sizes. As JASP did not provide 95% credible intervals (CrIs) for 2×2 contingency tables, we calculated these online using Jeffrey's prior distribution in R.[17]

Between-group differences were deemed meaningful if the Bayes factor was 30 or more and the effect size was at least moderate (ANOVA: Cohen's $d \geq 0.5$; pairwise comparisons: Cohen's $w \geq 0.3$).[18,19]

Ethics approval

The South-Eastern Sydney Local Health District Human Research Ethics Committee approved the study (2019/ETH10612).

Results

Of 19 948 ATOP assessments completed on entry to publicly funded NSW alcohol and other drug treatment services during 2016–19, we excluded 1024 because the principal drug of concern was not alcohol, amphetamine-type stimulants, cannabis, opioids, or cocaine (652 people sought help with another principal drug of concern, 245 for gambling problems; information on the principal drug of concern was unavailable for 127 people), 861 because the number of days of principal

1 Socio-demographic characteristics, social conditions, substance use, and self-reported health during preceding 28 days of 14 087 people entering treatment for alcohol, amphetamine-type stimulant, cannabis, cocaine, or opioids use in six New South Wales local health districts or networks, 1 July 2016 – 30 June 2019, by principal drug of concern*

Characteristics	Principal drug of concern				
	Alcohol	Amphetamine-type stimulants	Cannabis	Cocaine	Opioids
Number of people	6051	2534	2098	246	3158
Demographic characteristics					
Age (years), mean, (SD)	44.0 (12.4)	34.7 (9.2)	31.5 (11.2)	32.1 (9.3)	39.3 (10.6)
Age (years), range	15–88	16–70	14–68	18–60	17–85
Sex (male patients)	3916 (64.7%)	1612 (63.6%)	1401 (66.8%)	212 (86.2%)	2232 (70.7%)
Born in Australia	4345 (79.9%)§	2058 (91.9%)¶	1758 (92.1%)§	198 (88.4%)§	2575 (91.9%)§
Aboriginal or Torres Strait Islander	383 (7.1%)¶	353 (16.0%)¶	297 (15.6%)§	17 (7.6%)§	633 (22.8%)§
Preferred language: English	5376 (98.7%)§	2218 (99.4%)¶	1906 (99.6%)§	218 (97.8%)§	2766 (99.1%)¶
Social conditions					
Any work/study	2470 (45.0%)§	578 (24.4%)§	711 (37.1%)§	151 (73.7%)¶	442 (14.8%)§
Housing stress	629 (10.5%)	534 (21.2%)	220 (10.5%)	17 (7%)	665 (21.3%)
Living with children under 5 years of age	508 (8.5%)	264 (10.6%)	292 (14.1%)	28 (12%)	242 (7.9%)
Living with children aged 5–15 years	995 (16.7%)	301 (12.1%)	285 (13.7%)	33 (14%)	319 (10.4%)
Living with children under 16 years of age	1265 (21.2%)	468 (18.8%)	462 (22.3%)	52 (22%)	461 (15.0%)
Arrest	685 (11.4%)	422 (16.7%)	226 (10.8%)	33 (13%)	249 (8.0%)
Violence to self	439 (7.3%)	249 (9.9%)	176 (8.4%)	17 (7%)	127 (4.1%)
Violence to others	434 (7.2%)	275 (10.9%)	163 (7.8%)	13 (5%)	174 (5.6%)
Any violence	702 (11.7%)	406 (16.1%)	258 (12.3%)	23 (9%)	246 (7.9%)
Substance use					
Any alcohol use	5484 (90.6%)	1082 (44.2%)	959 (47.7%)	186 (78.5%)	931 (30.4%)
Frequency (days), median (IQR)†	24 (12–28)	4 (2–12)	6 (2–12)	8 (4–16)	4 (1–12)
Any amphetamine-type stimulants use	312 (5.6%)§	1770 (69.9%)	332 (16.9%)§	26 (11%)§	772 (25.2%)
Frequency (days), median (IQR)†	2 (1–8)	13 (4–25)	3 (1–10)	4 (2–12)	3 (1–9)
Any cannabis use	1095 (19.3%)§	943 (38.5%)	1796 (85.6%)	44 (20%)§	1055 (34.5%)
Frequency (days), median (IQR)†	16 (4–28)	18 (4–28)	28 (18–28)	10 (2–27)	14 (4–28)
Any cocaine use	252 (4.6%)§	119 (5.1%)§	75 (3.9%)§	194 (78.9%)	72 (2.5%)§
Frequency (days), median (IQR)†	3 (1–8)	1 (1–4)	1 (1–4)	8 (4–16)	2 (1–8)
Any opioid use (excluding OAT)	203 (3.7%)§	181 (7.6%)§	76 (3.9%)§	13 (5.9%)§	1806 (57.2%)
Frequency (days), median (IQR)†	12 (4–28)	8 (2–22)	12 (1–28)	4 (1–10)	28 (14–28)
Any benzodiazepine use	767 (13.8%)§	335 (14.0%)§	212 (10.9%)§	42 (19%)§	919 (30.1%)
Frequency (days), median (IQR)†	8 (3–27)	7 (2–20)	8 (3–28)	4 (1–12)	14 (3–28)
Any injecting drug use	118 (2.1%)§	797 (33.2%)§	88 (4.3%)	11 (5%)	1302 (42.9%)
Frequency (days), median (IQR)†	4 (2–10)	14 (5–26)	6 (2–15)	10 (2–20)	23 (7–28)
Shared equipment‡	31 (26%)	125 (16.0%)	13 (15%)	1 (9%)	204 (15.8%)
Daily tobacco use	3316 (57.0%)	1968 (80.9%)	1619 (79.2%)	124 (52.8%)	2506 (82.0%)
Self-rated health and wellbeing					
Psychological health, mean rating (SD)	5.03 (2.19)	5.25 (2.20)	5.42 (2.16)	5.10 (2.14)	5.74 (2.20)
Clinically significant problems (≤ 5)	2948 (57.2%)¶	1270 (55.7%)§	902 (49.8%)¶	124 (59.0%)¶	1355 (47.5%)§

Continues

1 Continued

Characteristics	Principal drug of concern				
	Alcohol	Amphetamine-type stimulants	Cannabis	Cocaine	Opioids
Physical health, mean rating (SD)	5.75 (2.13)	6.16 (2.00)	6.23 (2.09)	6.37 (1.82)	5.95 (2.07)
Clinically significant problems (≤ 5)	2289 (44.5%)¶	844 (37.0%)§	642 (35.4%)¶	67 (32%)¶	1189 (41.8%)§
Overall quality of life, mean rating (SD)	5.38 (2.30)	5.52 (2.32)	5.79 (2.23)	5.59 (2.14)	5.95 (2.25)
Clinically significant problems (≤ 5)	2679 (52.3%)¶	1134 (50.0%)§	775 (43.0%)¶	97 (47%)¶	1216 (42.8%)§

IQR = interquartile range; OAT = opioid agonist therapy; SD = standard deviation. * The denominators for each cell, and numbers of people in each drug of primary concern by 10-year age band, are reported in the Supporting Information, tables 1 and 2. † For those who reported using the substance in the preceding 28 days. ‡ For those reporting any injecting drug use. § 5–10% missing data. ¶ 11–15% missing data. ◆

2 Demographic characteristics and social conditions (continuous variables), by principal drug of concern: Bayesian analysis of variance and pairwise comparisons

Variable	Number*	Mean (95% CrI)	Principal drug of concern (*post hoc* comparator): Bayesian factor/Cohen *d*			
			Alcohol	Amphetamine-type stimulants	Cannabis	Cocaine
Age (years)						
Alcohol	6051	44.1 (43.7–44.4)	—	—	—	—
Amphetamine-type stimulants	2534	34.7 (34.3–35.0)	***> 300/0.83***	—	—	—
Cannabis	2098	31.5 (31.0–32.0)	***> 300/1.11***	> 300/0.28	—	—
Cocaine	246	32.1 (31.0–33.3)	***> 300/1.06***	> 300/0.23	0.11/–0.05	—
Opioids	3158	39.2 (38.9–39.6)	> 300/0.43	> 300/–0.41	**> 300/–0.68**	**> 300/0.63**
Work/study frequency (days, during preceding 28 days)						
Alcohol	5639	7.8 (7.5–8.0)	—	—	—	—
Amphetamine-type stimulants	2390	3.6 (3.3–3.9)	**> 300/0.51**	—	—	—
Cannabis	1949	5.8 (5.4–6.2)	0.04/0.24	> 300/–0.27	—	—
Cocaine	219	13.7 (12.4–14.9)	**> 300/–0.72**	***> 300/–1.23***	***> 300/0.96***	—
Opioids	3011	2.2 (2.0–2.5)	**> 300/0.68**	> 300/0.17	> 300/0.43	***> 300/1.40***

CrI = credible interval. * Number of people for whom relevant data were available. Bold italics: strong evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *d* ≥ 0.8). Bold non-italics: moderate evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *d* of 0.5 to < 0.8). ◆

drug of concern use were not available, and 3976 because they were second or subsequent assessments. An assessment could be ineligible for multiple reasons.

A total of 14 087 ATOP records were initially included in our analysis; the principal drug of concern for 6051 people was alcohol (43% of assessments), for 3158 opioids (22%), for 2534 amphetamine-type stimulants (18%), for 2098 cannabis (15%), and for 246 cocaine (2%). The reported frequency of use of each of the five major drug classes was greater among people for whom the respective drug was the principal drug of concern than in each of the four other groups (Box 1).

Alcohol as principal drug of concern

The mean age for this group (44.1 [95% CrI, 43.7–44.4] years) was higher than for the amphetamine-type stimulants, cannabis, and cocaine groups, and the proportion of women and girls (35.3%; 95% CrI, 34.1–36.5%) was larger than in the cocaine group. The mean number of work or study days during the preceding 28 days (7.8; standard deviation [SD], 7.5–8.0 days) was larger than for the amphetamine-type stimulants and opioids groups and lower than for the cocaine group. A smaller proportion reported daily tobacco use (57.0%; 95% CrI, 55.7–58.2%) than in the opioids group, and a smaller proportion reported recent injecting drug use (2.1%; 95% CrI, 1.7–2.4%) than in the amphetamine-type stimulants and opioids groups (Box 2, Box 3, Box 4).

Amphetamine-type stimulants as principal drug of concern

The mean age for this group (34.7 [95% CrI, 34.3–35.0] years) was lower than for the alcohol group, and the proportion of women and girls was larger (36.4%; 95% CrI, 34.5–38.3%) than in the opioids group. The mean number of work or study days during the preceding 28 days (3.6; SD, 3.3–3.9 days) was larger than for the opioids group and smaller than for the alcohol and cocaine groups. The proportions who reported arrest (16.7%; 95% CrI, 15.3–18.2%) or violence (16.1%; 95% CrI, 14.7–17.6%) were larger than in the opioids group. Mean frequency of recent alcohol consumption (3.8 days; 95% CrI, 3.6–4.1 days) was lower than for the cocaine group; the proportion who reported recent injecting drug use (33.2%; 95% CrI, 31.3–35.1%) was larger than in the cannabis and alcohol groups but smaller than in the opioids

3 Demographic characteristics and social conditions (binary variables), by principal drug of concern: Bayesian analysis of variance and pairwise comparisons

Variable	Number*	Proportion (95% CrI)	Principal drug of concern (comparator): Bayesian factor/Cohen *w*			
			Alcohol	Amphetamine-type stimulants	Cannabis	Cocaine
Sex (female patients)						
Alcohol	6051	35.3% (34.1–36.5%)	—	—	—	—
Amphetamine-type stimulants	2534	36.4% (34.5–38.3%)	0.04/0.01	—	—	—
Cannabis	2098	33.2% (31.2–35.2%)	0.11/0.08	0.48/0.26	—	—
Cocaine	246	14% (9.9–19%)	**> 300/0.48**	> 300/0.26	> 300/0.22	—
Opioids	3158	29.3% (27.5–30.9%)	> 300/0.13	***> 300/0.47***	3.2/0.53	***> 300/0.87***
Housing stress						
Alcohol	6009	10.5% (9.7–11.3%)	—	—	—	—
Amphetamine-type stimulants	2524	21.2% (19.6–22.8%)	> 300/0.14	—	—	—
Cannabis	2087	10.5% (9.3–11.9%)	0.04/0.08	> 300/0.28	—	—
Cocaine	246	6.9% (4.2–11%)	0.10/0.48	> 300/0.26	0.26/0.22	—
Opioids	3123	21.3% (19.9–22.8%)	> 300/0.19	0.04/0.46	***> 300/0.53***	***> 300/0.87***
Living with child under 5 years of age						
Alcohol	5955	8.5% (7.8–9.3%)	—	—	—	—
Amphetamine-type stimulants	2494	10.6% (9.4–11.8%)	3.49/0.03	—	—	—
Cannabis	2073	14.1% (12.6–15.6%)	> 300/0.11	36.0/0.26	—	—
Cocaine	242	12% (8.0–16%)	0.09/0.48	0.05/0.26	0.08/0.22	—
Opioids	3077	7.9% (7.0–8.9%)	0.08/0.10	26.9/0.46	***> 300/0.52***	0.31/0.87
Arrest						
Alcohol	6013	11.4% (10.6–12.2%)	—	—	—	—
Amphetamine-type stimulants	2522	16.7% (15.3–18.2%)	>300/0.07	—	—	—
Cannabis	2091	10.8% (9.5–12.2%)	0.05/0.08	> 300/0.26	—	—
Cocaine	246	13% (9.6–18%)	0.03/0.48	0.09/0.26	0.11/0.22	—
Opioids	3107	8.0% (7.1–9.0%)	> 300/0.12	**> 300/0.47**	19.7/0.52	2.1/0.87
Any violence						
Alcohol	5990	11.7% (10.9–12.6%)	—	—	—	—
Amphetamine-type stimulants	2519	16.1% (14.7–17.6%)	> 300/0.06	—	—	—
Cannabis	2090	12.3% (11.0–13.8%)	0.05/0.08	39.8/0.26	—	—
Cocaine	245	9.4% (6.2–14%)	0.03/0.48	2.34/0.26	0.12/0.22	—
Opioids	3109	7.9% (7.0–8.9%)	> 300/0.12	**> 300/0.47**	***> 300/0.52***	0.06/0.22

CrI = credible interval. * Number of people for whom relevant data were available. Bold italics: strong evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *w* ≥ 0.5). Bold non-italics: moderate evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *w* of 0.3 to < 0.5). ◆

group. The proportions who reported poor psychological health (55.6%; 95% CrI, 53.6–57.7%) or poor quality of life (50.0; 95% CrI, 47.9–52.0%) were larger than in the opioids group (Box 2, Box 3, Box 4, Box 5, Box 6).

Cannabis as principal drug of concern

The mean age for this group (31.5 [95% CrI, 31.0–32.0] years) was lower than for the alcohol and opioids groups. The mean number of work or study days during the preceding 28 days (5.8; SD, 5.4–6.2 days) was lower than for the cocaine group. Smaller proportions reported recent housing stress (10.5%; 95% CrI, 9.3–11.9%) than in the opioids group, and injecting drug use (4.3%; 95% CrI, 3.5–5.3%) than in the opioids and amphetamine-type stimulants groups. Smaller proportions reported poor physical health (37.0%; 95% CrI, 35.1–39.0%) or had experienced violence (12.3%; 95% CrI, 11.0–13.8%) than in the opioids group; a larger proportion lived with children under five years of age (14.1%; 95% CrI, 12.6–15.6%) (Box 2, Box 3, Box 4, Box 6).

Cocaine as principal drug of concern

The mean age for this group (32.1 [95% CrI, 31.0–33.3] years) was lower and the proportion of women smaller (14%; 95% CrI,

4 Injecting drug use and daily tobacco use in the past 28 days, by principal drug of concern: Bayesian analysis of variance and pairwise comparisons

Variable	Number*	Proportion (95% CrI)	Principal drug of concern (comparator): Bayesian factor/Cohen *w*			
			Alcohol	Amphetamine-type stimulants	Cannabis	Cocaine
Any injecting drug use						
Alcohol	5739	2.1% (1.7–2.4%)	—	—	—	—
Amphetamine-type stimulants	2402	33.2% (31.3–35.1%)	**> 300/0.45**	—	—	—
Cannabis	2032	4.3% (3.5–5.3%)	> 300/0.09	**> 300/0.39**	—	—
Cocaine	234	4.7% (2.5–8.0%)	1.0/0.48	> 300/0.26	0.08 /0.22	—
Opioids	3035	42.9% (41.2–44.7%)	***> 300/0.58***	***> 300/0.48***	***> 300/0.64***	> 300/0.22
Daily tobacco use						
Alcohol	5819	57.0% (55.7–58.2%)	—	—	—	—
Amphetamine-type stimulants	2434	80.9% (79.3–82.4%)	> 300/0.23	—	—	—
Cannabis	2044	79.2% (77.4–80.9%)	> 300/0.20	0.12/0.26	—	—
Cocaine	235	53% (46–59%)	0.03/0.48	> 300/0.27	> 300/0.23	—
Opioids	3055	82.0% (80.6–83.4%)	> 300/0.29	0.08/0.47	1.0/0.53	> 300/0.23

CrI = credible interval. * Number of people for whom relevant data were available. Bold italics: strong evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *w* ≥ 0.5). Bold non-italics: moderate evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *w* of 0.3 to < 0.5). ◆

9.9–19%) than for the alcohol and opioids groups. The mean number of work or study days during the preceding 28 days (13.7; SD, 12.4–14.9 days) was larger than for all other groups, and a smaller proportion reported housing stress (6.9%; 95% CrI, 4.2–11%) than in the opioids group. The mean reported frequency of recent alcohol consumption was higher (8.1 days; SD, 7.1–9.2 days) than for the opioids and amphetamine-type stimulants groups (Box 2, Box 3, Box 5).

Opioids as principal drug of concern

The mean age for this group (39.2 [95% CrI, 38.9–39.6] years) was higher than for the cocaine and cannabis groups; the proportion of women and girls (29.3%; 95% CrI, 27.5–30.9%) was larger than for the cocaine group and smaller than for the amphetamine-type stimulants group. The mean number of work or study days during the preceding 28 days (2.2; SD, 2.0–2.5 days) was smaller than for the alcohol, amphetamine-type stimulants, and cocaine groups. The proportion who reported housing stress (21.3%; 95% CrI, 19.9–22.8%) was larger than in the cannabis and cocaine groups; a smaller proportion reported living with children under five years of age (7.9%; 95% CrI, 7.0–8.9%) than in the cannabis group. A smaller proportion reported arrest (8.0%; 95% CrI, 7.1–9.0%) than in the amphetamine-type stimulants group, and recent violence (7.9%; 95% CrI, 7.0–8.9%) than in the amphetamine-type stimulants and cannabis groups. The frequency of recent alcohol consumption (2.6 days; 95% CrI, 2.4–2.8 days) was lower than for the cocaine group, the proportion who smoked tobacco daily (82.0%; 95% CrI, 80.6–82.0%) was larger than for the alcohol group, and the proportion who reported recent injecting drug use (42.9%; 95% CrI, 41.2–44.7%) was larger than in the alcohol, amphetamine-type stimulants, and cannabis groups. The proportions of people who reported poor psychological health (47.5%; 95% CrI, 45.6–49.3%) or quality of life (42.8%; 95% CrI, 41.0–44.6%) were smaller than in the amphetamine-type stimulants group, and that of people reporting poor physical health (41.8%; 95% CrI, 40.0–43.6%) was larger than in the cannabis group (Box 2, Box 3, Box 4, Box 5, Box 6).

Discussion

Consistent with previously published NSW and national data,[9] we found that most people commencing treatment for alcohol, amphetamine-type stimulants, cannabis, opioids, or cocaine use were male (9373, 66.5%), aged 20–39 years (7846, 50.4%), and were born in Australia (10 934, 86.7%). One-third of people commencing treatment were female, consistent with the fact that 34% of Australians aged 16–85 years with 12-month substance use disorders during 2020–21 were girls or women,[20] although barriers to treatment access for women have been described.[21,22]

Alcohol was the principal drug of concern for 43% of people seeking treatment included in our analysis (by comparison: NSW, 38%; Australia, 36% of people receiving alcohol and other drug treatment[9]). The mean age of people commencing treatment for alcohol use (44 years) was consistent with reports of substantial delays in seeking treatment in Australia.[23] Our findings suggest that barriers to treatment still need to be overcome, and screening and brief interventions are important for reducing alcohol dependence. Although official and media attention is often focused on illicit drugs, particularly methamphetamine,[24] alcohol remains the drug for which treatment is most frequently sought.[25]

Large proportions of people in each principal drug of concern group used tobacco daily (alcohol group: 57%; other groups: 53–82%), broadly consistent with the findings of similar studies.[26] As the daily smoking rate in Australia in 2017–18 was only 13.8%,[27] this finding indicates that smoking cessation requires greater attention when treating people for other substance use. Of the 118 people in the alcohol group who reported recent injecting drug use (2.1%), 31 had recently shared injecting equipment. Harm reduction programs, such as needle/syringe exchange and peer education, may not effectively reach this group. Further, about 16% of people who consumed opioids amphetamine-type stimulants, or cannabis also reported recent sharing.

Differences by principal drug of concern with regard to substance use, social conditions, and health status suggest

5 Frequency of substance use (in days) in the preceding 28 days, by principal drug of concern: Bayesian analysis of variance and pairwise comparisons

			Principal drug of concern (*post hoc* comparator): Bayesian factor/Cohen *d*			
Substance used	**Number***	**Mean (95% CrI)**	**Alcohol**	**Amphetamine-type stimulants**	**Cannabis**	**Cocaine**
Alcohol						
Alcohol	6051	18.0 (17.7–18.3)	—	—	—	—
Amphetamine-type stimulants	2447	3.8 (3.6–4.1)	***> 300/1.65***	—	—	—
Cannabis	2011	4.2 (3.9–4.5)	***> 300/1.60***	0.14/–0.04	—	—
Cocaine	237	8.1 (7.1–9.2)	***> 300/1.15***	**> 300/0.50**	> 300/–0.46	—
Opioids	3067	2.6 (2.4–2.8)	***> 300/1.79***	> 300/0.15	> 300/0.19	**> 300/0.65**
Amphetamine-type stimulants						
Alcohol	5602	0.34 (0.28–0.40)	—	—	—	—
Amphetamine-type stimulants	2534	10.0 (9.5–10.4)	***> 300/–1.71***	—	—	—
Cannabis	1959	1.2 (1.0–1.4)	> 300/–0.15	*> 300*/1.56	—	—
Cocaine	230	0.75 (0.36–1.1)	2.20/–0.07	*> 300*/1.64	0.22/0.08	—
Opioids	3061	1.7 (1.5–1.9)	> 300/–0.24	*> 300*/1.47	42.5/–0.09	4.0/–0.17
Benzodiazepine						
Alcohol	5572	1.76 (1.61–1.92)	—	—	—	—
Amphetamine-type stimulants	2389	1.60 (1.38–1.82)	0.05/0.02	—	—	—
Cannabis	1945	1.35 (1.12–1.59)	1.12/0.06	0.11/0.04	—	—
Cocaine	225	1.52 (0.87–2.16)	0.09/0.04	0.08/0.01	0.09/–0.02	—
Opioids	3052	4.61 (4.28–4.95)	> 300/–0.42	> 300/–0.45	> 300/–0.49	> 300/–0.46
Cannabis						
Alcohol	5661	3.10 (2.89–3.30)	—	—	—	—
Amphetamine-type stimulants	2452	6.38 (5.96–6.79)	> 300/–0.35	—	—	—
Cannabis	2098	19.3 (18.9–19.8)	***> 300/–1.72***	***> 300/–1.37***	—	—
Cocaine	225	2.58 (1.65–3.52)	0.12/0.05	> 300/0.40	***> 300/1.78***	—
Opioids	3062	5.42 (5.07–5.77)	> 300/–0.25	12.1/0.10	***> 300/1.48***	> 300/–0.30
Cocaine						
Alcohol	5494	0.26 (0.21–0.31)	—	—	—	—
Amphetamine-type stimulants	2340	0.14 (0.10–0.18)	2.47/0.06	—	—	—
Cannabis	1913	0.15 (0.10–0.21)	0.54/0.06	0.04/–0.01	—	—
Cocaine	246	8.22 (7.13–9.27)	***> 300/–4.15***	***> 300/–4.21***	***> 300/–4.21***	—
Opioids	2925	0.15 (0.10–0.21)	0.94/0.06	0.03/–0.01	0.03/–96.19	***> 300/4.21***
Opioid						
Alcohol	5516	0.54 (0.45–0.63)	—	—	—	—
Amphetamine-type stimulants	2374	0.89 (0.72–1.06)	41.4/–0.05	—	—	—
Cannabis	1926	0.57 (0.41–0.73)	0.03/–0.004	1.12/0.05	—	—
Cocaine	221	0.36 (0.10–0.63)	0.10/0.03	0.41/0.08	0.11/0.03	—
Opioids	3075	12.3 (11.8–12.7)	***> 300/–1.68***	***> 300/–1.63***	***> 300/–1.68***	***> 300/–1.71***

CrI = credible interval. * Number of people for whom relevant data were available. Bold italics: strong evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *d* ≥ 0.8). Bold non-italics: moderate evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *d* of 0.5 to < 0.8). ◆

opportunities for more effective care. For example, services for people using amphetamine-type stimulants should be aware of their high rates of mental health problems, injecting drug use, daily tobacco use, and social problems (such as housing stress, violence, and underemployment). Routine use of the ATOP can both assist medical practitioners understand their patients' circumstances, to address them in treatment plans, and to guide more effective workforce training and recruitment strategies for service managers.

Despite the differences between principal drug of concern groups, our findings indicate that multiple substance (polydrug)

6 Proportions of people with poor self-rated health and wellbeing (0–5 on scale of 1 to 10) during the preceding 28 days, by principal drug of concern: Bayesian analysis of variance and pairwise comparisons

Variable	Number*	Proportion (95% CrI)	Principal drug of concern (comparator): Bayesian factor/Cohen *w*			
			Alcohol	Amphetamine-type stimulants	Cannabis	Cocaine
Poor psychological health						
Alcohol	5151	57.2% (55.9–58.8%)	—	—	—	—
Amphetamine-type stimulants	2281	55.6% (53.6–57.7%)	0.06/0.01	—	—	—
Cannabis	1811	49.8% (47.5–52.1%)	> 300/0.12	42.0/0.22	—	—
Cocaine	210	59% (52–66%)	0.02/0.49	0.04/0.28	0.85/0.23	—
Opioids	2854	47.5% (45.6–49.3%)	> 300/0.14	**> 300/0.44**	0.12/0.51	4.3/0.86
Poor physical health						
Alcohol	5145	44.5% (43.1–45.8%)	—	—	—	—
Amphetamine-type stimulants	2279	37.0% (35.1–39.0%)	> 300/0.07	—	—	—
Cannabis	1814	35.4% (33.2–37.6%)	> 300/0.12	0.07/0.22	—	—
Cocaine	210	32% (26–38%)	10.0/0.49	0.09/0.28	0.06/0.23	—
Opioids	2847	41.8% (40.0–43.6%)	0.43/0.10	13.3/0.44	**> 300/0.51**	1.2/0.23
Poor quality of life						
Alcohol	5123	52.3% (50.9–53.7%)	—	—	—	—
Amphetamine-type stimulants	2269	50.0 (47.9–52.0%)	0.15/0.02	—	—	—
Cannabis	1802	43.0% (40.7–45.3%)	> 300/0.13	> 300/0.22	—	—
Cocaine	208	47% (40–53%)	0.05/0.49	0.04/0.28	0.06/0.23	—
Opioids	2840	42.8% (41.0–44.6%)	> 300/0.14	**> 300/0.44**	0.04/0.51	0.04/0.23

CrI = credible interval. * Number of people for whom relevant data were available. The mean values for each parameter, by principal drug of concern, is included in the Supporting Information, table 3; no meaningful differences between means were identified. Bold italics: strong evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *w* ≥ 0.5). Bold non-italics: moderate evidence of a meaningful difference (Bayes factor ≥ 30 and Cohen's *w* of 0.3 to < 0.5). ◆

use is the norm, not the exception. Among people for whom opioids were the main concern, for example, large proportions reported recent alcohol (30.4%), cannabis (34.5%), amphetamine-type stimulants (25.2%), or benzodiazepine use (30.1%). Medical practitioners should assess all substance use rather than assuming that the principal drug of concern is the only substance an individual uses. Validated screening questionnaires can be useful in this regard, including the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)[28] in primary health settings and the ATOP in alcohol and other drug treatment services.[9] Treatment plans should explicitly recognise risks arising from polysubstance use, including greater overdose risks associated with concomitant alcohol, benzodiazepines, or opioids use.

Recent housing stress and violence were frequently reported by people commencing treatment for substance use, and the numbers of days on which they worked or studied were low. Further, large proportions reported poor psychological health (47–59%), poor physical health (32–44%), and poor quality of life (43–52%). In contrast, 15.4% of Australians aged 16–85 years reported high or very high levels of psychological distress during 2020–21,[20] and 14.7% of people aged 15 years or older reported fair or poor health during 2017–18.[27] Our findings are consistent with reports of the social disadvantage and poor health of many people seeking help with substance use problems.[4,25] However, our findings of differences between people with different principal drugs of concern in self-rated psychological and physical health and quality of life are novel and highlight the heterogeneity of people seeking treatment for alcohol and other drug use.

Limitations

We analysed a large dataset of routinely collected data from a broad range of alcohol and other drug treatment services, but the generalisability of our findings beyond NSW public treatment services is uncertain. We did not impute missing data, as much as 20% for some variables, reflecting the incompleteness of data collected for clinical rather than research purposes. Self-reported patient information is subject to the quality of recall, data entry, and coding. Further, our analyses did not take treatment type (eg, counselling, withdrawal, pharmacotherapy), geographic area, or demographic differences between groups into account. Finally, we analysed data from initial patient assessments; longitudinal studies of people who regularly complete ATOP assessments would be useful. Such an investigation would benefit from service-level support for integrating the ATOP into routine clinical practice to improve data quality and to facilitate feedback-informed treatment.

Conclusions

The demographic characteristics, social conditions, substance use, and self-reported health of people commencing treatment for substance use differ according to their principal drug of concern. Health care providers can apply knowledge of these differences to afford more holistic and person-centred care.

Our findings illustrate the utility of routinely collected data for informing service planning, development, and evaluation.

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Supporting Information

Additional Supporting Information is included with the online version of this article.